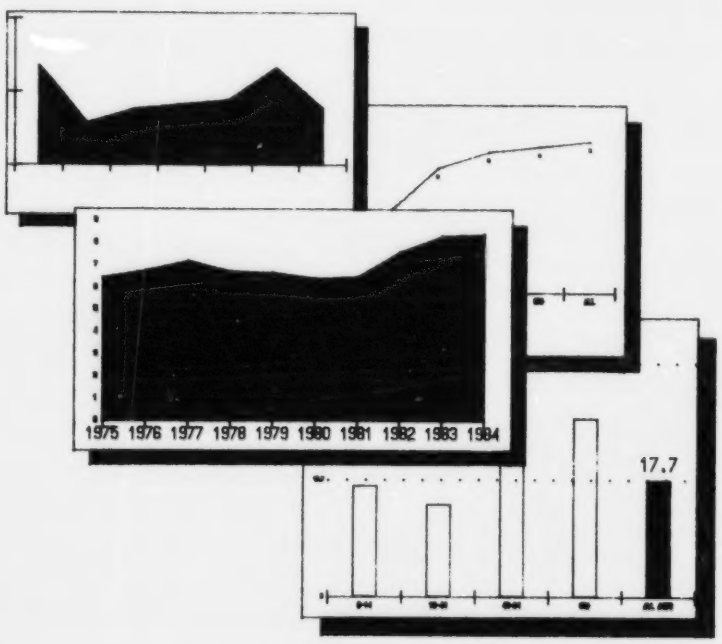
Study Into the Growth In Use of Health Services

Report of the Review Committee to the Minister of Health



JANUARY, 1989

STUDY INTO THE GROWTH IN USE OF HEALTH SERVICES

REPORT OF THE REVIEW COMMITTEE
TO THE MINISTER OF HEALTH

JANUARY, 1989

The Honourable George McLeod
Minister of Health

Dear Mr. McLeod:

We are pleased to submit to you our review and summary of a "Study Into The Growth In Use Of Health Services."

Over the past year and a half we have collected and examined a great deal of technical information dealing with the changes in health service usage. This report summarizes our reaction to that material. It describes several areas of concern and the action that might be taken to address them.

Our efforts have convinced us that there is a useful role for government and provider organizations to jointly study the changing patterns of health service usage. Our recommendations reflect this confidence in a potentially powerful vehicle for policy review in the health care sector.

Yours respectfully,

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January 1989
REGINA, Saskatchewan

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The present study revolved around a great deal of work involving the collection and analysis of data from Saskatchewan Health files. This work was carried out by a Technical Group made up of Saskatchewan Health employees and an outside consultant. The Review Committee wishes to express its thanks to these persons.

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EXECUTIVE SUMMARY

The "Study into the Growth in Use of Health Services" commenced in May 1987 with the objective of measuring and evaluating the changing patterns of health service usage. It represents a joint effort between government and several health provider organizations: the Saskatchewan Medical Association; the College of Physicians and Surgeons of Saskatchewan; the Saskatchewan Health-Care Association; and the Saskatchewan Registered Nurses' Association. The review was limited to the services provided by fee-for-service physicians, hospital care, and out-patient prescription drugs.

This report summarizes Phase I of the study. The concentration thus far has been on measurement in that it addresses the question of "what has happened," without delving into questions of how or why. The goal at this stage was seen as one of identifying potential areas of concern. The present report summarizes these investigations and makes several recommendations to the Minister of Health which outline an on-going program of evaluation and review in the health care sector.

The implementation of these recommendations will determine the nature and character of Phase II. Though the Committee believes that significant progress has been made to date, the payoff to our efforts will come from the more intensive review, including the consideration of policy options, to take place in the next stage.

It is important to note that no attempt was made to measure the impact of the recent historical changes in health service use on health status. This could focus attention solely on the costs of health care services while ignoring the benefits derived from them. This is not our intention. The proper allocation of resources to and within the health care sector requires a balancing of costs and benefits. This Phase I study was seen as a logical beginning to that process.

In developing a picture of the changing patterns of usage, the Committee reviewed data from two years, i.e. those ending June 30 of 1978 and 1986. In the summary that follows, reference is often made to urban and rural residents. The former includes those persons living in Regina, Saskatoon, Moose Jaw, Prince Albert, North Battleford, Swift Current, and Yorkton.

- In general, the use of services has increased significantly. This refers to physician services, the use of out-patient prescription drugs, and separations from hospitals for most major surgical procedures. More services per person are being provided to persons of all ages (male and female) and in all areas of the province.

° After adjusting for the changing size and age structure of the population, expenditures for physician services were $25.1 million (or 17.7 percent) higher in 1985/86 than in 1977/78 simply because of the increased use per person. Based on 1985/86 expenditures per person, this amount would have been sufficient to fund all of the physician services for a city of 150,000 people.

° Several other areas of concern were identified with respect to physician services:

- Use per person by urban residents was about 20 percent higher than that for rural residents in both of the study years. Though there was significant "catch-up" on the part of rural residents with respect to specialist services, the 20 percent gap was maintained because of the increased use of general practitioners by urban residents.

- After adjusting for any differences in the age structure of their respective populations, use per person of general practitioner services increased by 12.5 percent for urban residents between 1985/86 and 1977/78 while for rural residents it decreased by 2.7 percent. Most of the increased use for urban residents was accounted for by office visits; services associated with hospitals (major surgery, obstetrics, anaesthesia, and hospital visits) were down in all patient locations. These patterns appear to follow manpower trends, i.e. increased availability of GPs in urban areas with a decline in rural areas.

- Physician consultations, provided primarily by medical and surgical specialists, increased by 34.2 percent per person over the eight years of the study after age-sex adjustment.

- Use of diagnostic services per person more than doubled between 1977/78 and 1985/86, after age-sex adjustment.

- Amount of major surgery per person went up 9.7 percent after age-sex adjustment.

° New products introduced after 1977/78 accounted for almost half of all expenditures for drug materials (out-patient only) in 1985/86. Though this was the major component of the change in drug expenditures, there was also a significant increase in the use of drugs that were available in both 1977/78 and 1985/86. After age-sex adjustment, use per person of these drugs increased by 38.8 percent between the study years.

° Physicians sometimes indicate "no-sub" on prescriptions, which prevents substitution in favour of lower-priced generics. Growth in "no-sub" has been dramatic, though the impact of recent changes to the drug plan are unknown.

° Several other areas of concern were identified with respect to out-patient prescription drugs:

- For Cardiovascular Drugs: large increase in expenditures; introduction of new products was a major factor, but use of drugs available in both 1977/78 and 1985/86 also increased significantly; much higher (44.2 percent) use per person by Regina compared to Saskatoon residents.

- For Central Nervous System Drugs: new products a major factor, especially with respect to the non-steroidal anti-inflammatory drugs; much higher use per person of psychotherapeutic agents for residents of the smaller cities (Moose Jaw, Prince Albert, North Battleford, Swift Current, and Yorkton), especially with respect to tranquilizers and sedatives.

- For Anti-Infective Agents: large increases in use per person in all areas of the province.

° Review of hospital data raised some concerns regarding the roles for hospitals outside Regina and Saskatoon. In general, very few of the acute care days in these hospitals appear to be associated with surgical, diagnostic, or therapeutic procedures. These days may be serving other important functions and the Committee has suggested that this issue be investigated further.

° Though use per person increased for all age groups, it tended to be greatest amongst those over age 65. Much has been written about the "crisis" in the growing numbers of elderly, but their growth in use per person is an issue of at least equal significance.

° Of the groups studies, Status Indians had the highest levels of health service use per person.

The Committee has advanced the following recommendations to the Minister of Health based on their review of the data:

- That the Minister of Health establish a Standing Committee on the Patterns of Health Service Usage.

- That the results of the Review Committee's work, including the full report of the Technical Group, be made readily available to interested parties.

- That the proposed Standing Committee on the Patterns of Health Service Usage be requested to develop a strategy for disseminating key pieces of information from the Study into the Growth in Use of Health Services to the public.

- That the proposed Standing Committee on Patterns of Health Service Usage be requested to give the following areas of special study top priority:

  1. Changes in the use of services by the elderly, including the use of special care homes and the home care program.

  2. Changes and regional variations in the treatment of cardiovascular disease.

  3. Clarification of the roles of regional, community and rural hospitals.

- That a patient and physician drug education program be established, with anti-infective agents being the first target.

- That the College of Physicians and Surgeons of Saskatchewan be requested to investigate prescribing patterns for cardiovascular drugs.

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INTRODUCTION

This report summarizes the first phase of a study into the growth in use of health services in Saskatchewan. The project represents a joint effort on the part of the Department of Health and several non-government organizations: the Saskatchewan Medical Association; the College of Physicians and Surgeons of Saskatchewan; the Saskatchewan Health-Care Association; and the Saskatchewan Registered Nurses' Association. The review has been limited to the services provided by fee-for-service physicians, hospital care, and out-patient prescription drugs.

Phase I of the study has concentrated on measurement in that it addresses the question of "what has happened," without delving into questions of how or why. The goal at this stage was seen as one of identifying potential areas of concern. The present report summarizes these investigations and makes several recommendations for your consideration regarding:

- the role of utilization analysis and the need for joint action by government, providers, and patients;
- issues of immediate concern where action is required now;
- areas of potential concern, which should receive more intensive review.

The implementation of these recommendations will determine the nature and character of Phase II. Though the Committee believes that significant progress has been made to date, the payoff to our efforts will come from the more intensive review, including the consideration of policy options, to take place in the next stage.

It is important to note that no attempt was made to measure the impact of the recent historical changes in health service use on health status. This could focus attention solely on the costs of health care services while ignoring the benefits derived from them. This is not our intention. The proper allocation of resources to and within the health care sector requires a balancing of costs and benefits. This Phase I study was seen as a logical beginning to that process.

Further details on the framework and objectives for the study are provided later. The next section deals with the more basic issue as to why a study was thought necessary.

REASONS FOR INITIATING THE STUDY

Utilization and Negotiations

The issue of "utilization" is commonly raised during physician fee schedule negotiations across Canada. In this context, utilization can be taken to mean increases in expenditures for physician services above those which can be explained by the changes in fees or the size of the covered population. In other words, it is the change in the use of services per person which, historically, has been growing over time.

The government's position has been that utilization must be one of the factors to be considered when arriving at agreements on amendments to the Medical Care Insurance Branch Schedule of Fees. Without this, the government's ability to manage the public purse is lessened.

In contrast, the position of the Saskatchewan Medical Association (SMA) has been that the purpose of negotiations is to establish a fair price for medical services. In the view of that organization, this does not include the concept of volume discounting, especially when there is little evidence as to how the additional services have affected the health status of the population.

Both parties recognize that utilization will continue to be discussed at the negotiating table. There is also a recognition, however, that there are significant problems to limiting the discussion to this forum alone.

- The issue of utilization is complex and intricate, involving the allocation of scarce resources within the health care system. The competitive environment of negotiations does not always provide the best setting for these discussions.

- Many of the issues associated with utilization cannot be resolved through the global increase in the Schedule of Fees, though this is the major focus of negotiations.

- A broader view is required; the scope of the inquiry has to be expanded beyond physician services alone and has to include a wider range of professional organizations.

- The inquiry has to be on-going; utilization is not an issue that can be resolved by a single study, but rather it is a continuing process of monitoring and adjustment aimed at improving efficiency and effectiveness in the system.

In response to the above, Saskatchewan Health and the SMA agreed to a study in June 1986. In and around the same time, the study was identified as part of the Department's Strategic Plan.

This describes the immediate cause for study--it was in response to the problems of attempting to address a particular issue during fee schedule negotiations. There were other reasons, however, which are briefly described below.

Expenditure Growth and Use

The rate of growth of health care expenditures by the provincial government over the past decade has been dramatic. Between 1976/77 and 1986/87, these increased from $351 to $1,165 million, or an annual growth rate of 12.7 percent. As a basis for comparison, Saskatchewan's Gross Domestic Product increased by 127.8 percent over those same years, or an annual growth rate of 8.6 percent.

While some of this growth has simply mirrored general price increases and other factors have played a role, the increased per capita use of services has also been substantial. This pattern raises fundamental policy questions regarding the allocation of scarce resources, both to health care as opposed to other activities, and within health care. If policy development is to proceed in an informed manner, it seems essential to understand the dynamics and effects on health status of the recent historical changes in health service use. This Phase I study was seen as a logical beginning to that process.

Physician and Hospital Supply and Distribution

Several trends in physician supply are apparent, i.e. the present and growing disparity between rural and urban areas and the almost total concentration of specialists in urban centres, especially Regina and Saskatoon. In addition, the province's base hospitals are located in these two cities. This provides several reasons for initiating the study.

First, the urban-rural disparity in physician manpower can be expected to create urban-rural disparities in use.

Second, the geographic disparity in use can be expected to have grown in the past few years as most new physician registrants have chosen to locate in Regina and Saskatoon.

Third, it is important to document the use patterns for residents of those areas where there has been a rapid increase in the supply of physicians. As these persons receive more and more services we may go beyond the point of efficient consumption, i.e. beyond that point where the benefits attributable to the service are of equal or greater value than their cost. The potential for the provision of services of little or no benefit provides the single most important reason for initiating studies into utilization. This applies to the use of physician, drug, and hospital services.

Aging and Utilization

The Committee noted that recent discussions over the "aging" of Saskatchewan's population had some implications with respect to the present study.

First, as the number of elderly persons expands, the mix of resources required to meet the health needs of the population will change. Studies of utilization can assist in planning efforts by providing a picture of the impact of these changing requirements.

Second, other studies have shown that the patterns of use amongst the elderly has been changing. Specifically, increases in use per person have tended to be greater amongst the elderly than in other age segments of the population. What types of services are the elderly using more of now than they were ten years ago? Is this investment providing a reasonable return?

Development of Management Data Bases

To begin to measure and understand the issues related to utilization requires information not only over time, but also across regions, patient age groups, and types of service. One of the perceived benefits of initiating this project was that it facilitated the beginnings of a health planning data base. Other provinces (e.g. British Columbia) have recently instituted similar planning capabilities.

The data bases that were developed are described in detail in a technical report prepared for the study. For now it can simply be noted that the files are comprehensive and can be used for a number of purposes beyond the limited objectives of this project.

FRAMEWORK FOR THE STUDY

The Terms of Reference (see Appendix) set the following objectives for the study:

1. To measure the changing levels of use of physician, drug, and hospital services over time, including comparisons by patient age, sex, residence, and condition.

2. Where possible, to evaluate changes in the use of services according to the following criteria:

   - Effectiveness - Are there discernible benefits to the patient associated with the increased use?

   - Efficiency - Has the increased expenditure represented an efficient allocation of limited government resources in meeting both health and other objectives of the province?

   - Equity - Does increased use measure improved accessibility by the population in general or by certain sectors only, such as the urban population?

3. To identify factors which have influenced the changing use of services and endeavour to explain them.

4. To recommend changes in current policy to rectify any identified problems.

It was recognized at the outset that meeting these objectives would first require a comprehensive review of the change in health service usage. A two-phase approach was therefore developed, with the first concentrating on objective 1 above. This was seen as providing an information base from which areas requiring more detailed analysis, to be carried out in Phase II, could be identified.

The work entailed in Phase I was carried out by a Technical Group made up of employees from various branches within the Department. Michael Gormley served as the chairperson of this group and as the co-ordinator for the entire project. Expert methodological and analytical advice was provided by Dr. Morris Barer, a health economist with the Division of Health Services Research and Development at the University of British Columbia.

Responsibility for overseeing the entire project rested with the Review Committee. Its first major task was to review the work of the Technical Group, with special attention to any recommendations for Phase II studies.

As at the completion of Phase I, membership on the Review Committee was as follows:

NAME	ORGANIZATION
Glenda Yeates (chair)	Saskatchewan Health
Dr. Dennis Kendel	College of Physicians and Surgeons of Saskatchewan
Dr. Craig Hubbard	Saskatchewan Medical Association
Dr. Joel Blanchard	Saskatchewan Medical Association
Dr. Brian Habbick	Saskatchewan Medical Association
Judith O'Shaughnessy	Saskatchewan Registered Nurses' Association
Royce Gill	Saskatchewan Health-Care Association
Michael Shaw	Saskatchewan Health
David Babiuk	Saskatchewan Health

The contributions of several other individuals should also be recognized. John Heath, former Associate Deputy Minister of Health, chaired the Review Committee for most of the project until October 1988. Other employees of the Department who served on the Committee were Richard Bailey, Assistant Deputy Minister; Darrell Thomson, Assistant Deputy Minister; and Jim Wolstenholme, Director of the Strategic Planning and Evaluation Branch. The Committee would particularly like to acknowledge the contribution of Dr. Vince Matthews, Saskatchewan Medical Association, who passed away this last fall.

COMMITTEE ACTIVITIES

The first meeting of the Committee took place on May 26, 1987 and were held approximately every six weeks until December 1988. Major activities included the following:

- May 1987 to October 1987 - approval of basic research design proposed by Technical Group; creation of major data files
- November 1987 to September 1988 - presentations by Technical Group of the analysis of the data files and comments by the Review Committee
- October 1988 to December 1988 - final presentations by Technical Group; preparation of this report

As can be seen from the above, much of the activity centered around a great deal of technical work involving the analysis of Saskatchewan Health data. The major results are summarized below, with the full details being provided in a much longer report which was presented to the Review Committee by the Technical Group.

TECHNICAL REPORT: OUTLINE OF METHODOLOGY

For the purpose of this report, it is not necessary to go into all of the details which went into the data file creation and analysis. Four elements of the methodology have to be described, however, for a complete understanding of the summary of findings which follows later.

Study Period

Two service years were covered, i.e. those ending June 30, 1978 and June 30, 1986. Throughout the remainder of the report these will be referred to as the service years 1977/78 and 1985/86.

The use of only two service years was dictated by the availability of resources to carry out the study. This limited the type of analysis that could be carried out, e.g. projections based on time trends were not possible. We have made every attempt, however, not to "over reach" the data and to keep mindful of its limitations. Many of the changes and regional differences in health service use reported later were too large to be attributable to year-to-year variations alone.

Services Examined

- Physician services provided on a fee-for-service basis. Services provided by physicians on salary were excluded.
- Prescription drugs provided on an out-patient basis. Drugs provided to hospital in-patients were not included.
- Hospital separations taking place during the study year. This included separations from out-of-province hospitals.

Study Population

The study population covered virtually all persons registered by Saskatchewan Health. Major exclusions are noted below:

Branch	Exclusions
Medical Care Insurance	- residents of the Swift Current Health Region
Prescription Drug	- Status Indians
Hospital Services	- none

For example, all references to data regarding physician services exclude residents of the Swift Current Health Region as that region administered its own claims in the earlier study year. Similarly, coverage for prescription drugs for Status Indians were provided by the federal government and were therefore excluded from the study.

Regional Boundaries

For the purposes of the study, the province was divided into several regions. These were used in the comparisons of health service use by patient residence as well as in the development of inter-regional comparisons of physician and hospital supply.

Fourteen of the geographic categories employed in the study were identified as the province's seven largest cities, with a corresponding rural area being drawn around each of these. Northern Saskatchewan was used as a fifteenth category.

In addition to these, Status Indians were placed into a separate group. This is unfortunate, but made necessary by the fact that the geographic code appearing on the Health Insurance Registration File refers to the Indian band, not the person's place of residence.

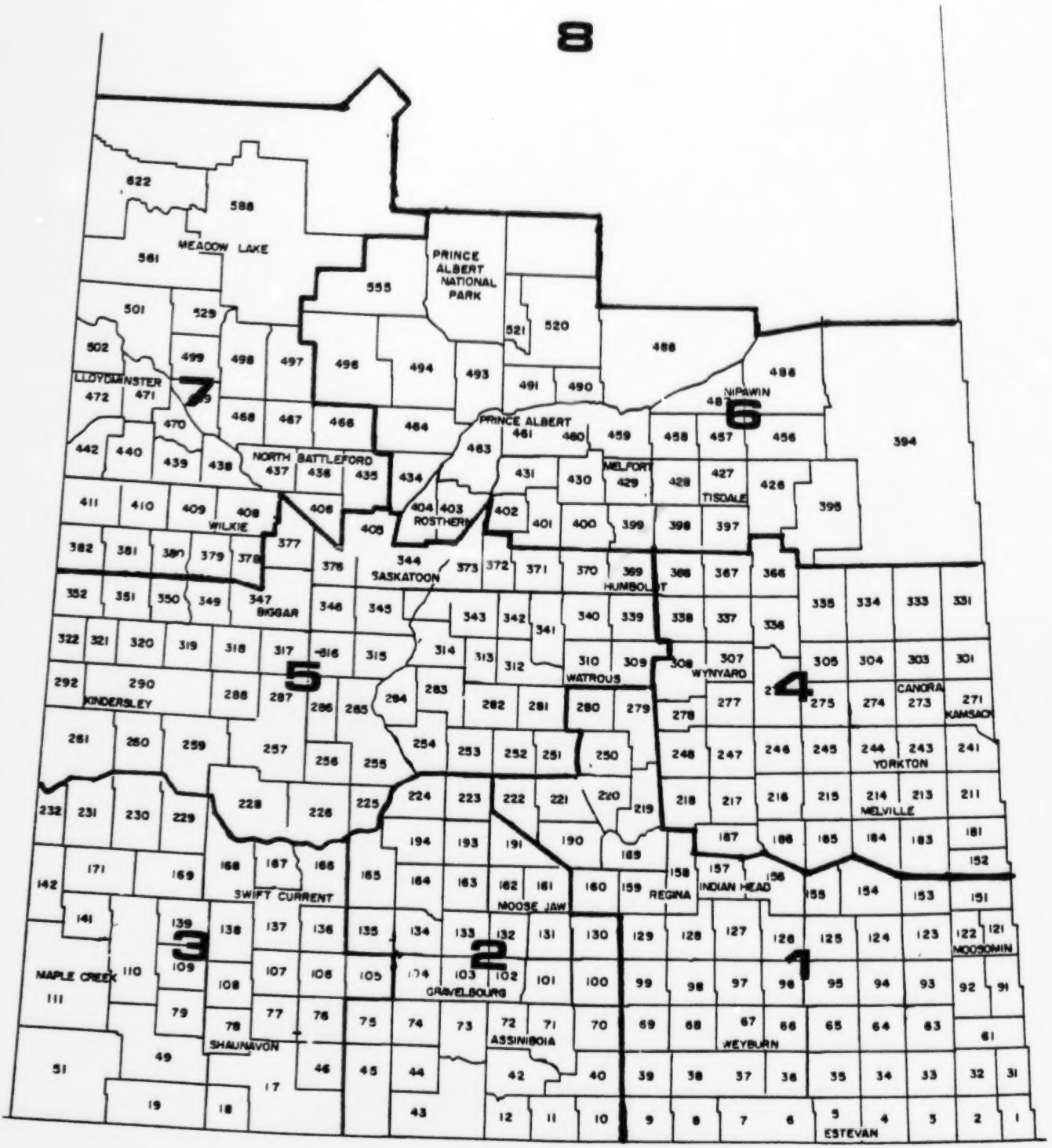
The fifteen geographic categories are mapped as Figure 1. The corresponding location names used throughout the study are given below.

Numbers on Map	Includes Location Categories:
1	- Regina - Regina Rural
2	- Moose Jaw - Moose Jaw Rural
3	- Swift Current - Swift Current Rural
4	- Yorkton - Yorkton Rural
5	- Saskatoon - Saskatoon Rural
6	- Prince Albert - Prince Albert Rural
7	- North Battleford - North Battleford Rural
8	- Northern Saskatchewan

The following alternative categorization of provincial residents is often employed in the report:

a) Status Indians; b) Urban residents (persons living in the provinces' seven largest cities, as outlined above);
c) Rural residents (all other residents, including those of Northern Saskatchewan).

Figure 1: Regional Boundaries for the Study



Age-Sex Adjustment

Comparisons of utilization statistics are often blurred by differences in the underlying age-sex distributions of the respective populations. Usage may be higher in one region than another, for example, simply because of an older population.

To account for this, most of the reported findings which follow are based on data which has been age-sex adjusted to the 1986 provincial population. This adjustment was made on both a regional and temporal basis. For example, comparisons between the urban and rural residents have eliminated the older rural population as a factor in explaining any of the observed differences in use. In addition, comparisons between the study years have been adjusted for any changes in the age-sex distribution of the population which occurred between 1977/78 and 1985/86.

Throughout the following, results based on age-sex adjusted data have been noted. Where not indicated, it should be assumed that results are based on data which has not been age-sex adjusted.

TECHNICAL REPORT: SUMMARY OF MAJOR CONCERNS AND FINDINGS

Figure (Page)

The following presents the major concerns identified by the Committee and the findings upon which those concerns were based. The Figures referred to in the marginal notes on the right hand side begin on page 30.

Budgetary impact of the increased use of physician services

- Between 1977/78 and 1985/86, Medical Care Insurance Branch expenditures for the study population went from $65.3 to $165.3 million, or an increase of 152.9 percent over eight years. [NOTE: As stated earlier, this includes virtually all residents with the only major exception being those of the Swift Current Health Region.] — I (31)

- The MCI Fee Schedule increased by 94.7 percent, implying the following:

Increase Due to:	Increase:
Fee Adjustments	94.7%
Volume of Service	29.9
Total*	152.9%

* The percentage figures do not add to the "Total" increase due to the multiplicative impact of fees and volume on total expenditures. The increase in fees and volume compound to the total increase of 152.9 percent.

- The increase in the volume of service can be broken down into the increase in the size of the population and any change in the average volume of service per person. The latter amount can be further broken into the increases attributable to the aging of the population and the general increase in use or "utilization."

Increase Due to:	Increase:
Population Growth	7.7%
Volume per Person	20.6
- Aging	2.4
- Utilization	17.7
Total*	29.9%

* Component increases compound to "Total."

Figure (Page)

° The budgetary impact of utilization can be calculated by adjusting 1977/78 payments for the changes in fees, population growth, and population aging.

1985/86 Actual	$165.3M
1977/78 Adjusted (fees, population, aging)	$140.2M
Dollar Impact of Utilization	$ 25.1M

II (32)

° In summary, after adjusting for the increases in fees, population growth, and population "aging", an extra $25.1 million was spent in 1985/86. Based on that year's use rates and fees, this amount would be sufficient to meet the physician service needs of a city of 150,000 people.

Urban-rural disparities in the use of physician services

° For 1985/86, higher levels of use were found for urban than rural residents, principally because of specialist care. Status Indians also had high levels of use, but because of general practitioner services.

° Greatest level of use was found amongst Status Indians, at 30.6 percent above the 1985/86 provincial average after age-sex adjustment. Other residents with relatively high levels of use per person included those of Regina, at 15.8 percent above the provincial average; Saskatoon, 7.3 percent; Prince Albert, 3.0 percent.

° Use per person (age-sex adjusted) of general practitioner services in 1985/86 was greatest amongst Status Indian at 59.0 percent above the provincial average. For the remaining residents, 1985/86 use per person was tightly distributed. It ranged from 12.7 percent below (Northern Saskatchewan residents) to 5.5 percent above (Moose Jaw Rural residents) the provincial average.

Figure (Page)

° Use per person of services provided by medical specialists varied significantly by region, with urban residents having much higher levels of use.

Comparison With 1985/86 Provincial Average	Patient Residence*
20% or more above	Regina, Moose Jaw, Prince Albert
10-20% above	Saskatoon
Within 10%	Yorkton, North Battleford, Status Indians
10-20% below	Regina Rural, Moose Jaw Rural
More than 20% below	Yorkton Rural, Saskatoon Rural, Prince Albert Rural, North Battleford Rural, Northern Saskatchewan

*Regional figures were first age-sex adjusted to the 1986 provincial population.

° Use per person of services provided by surgical specialists also varied by region, but not as greatly as that for medical specialists.

Comparison With 1985/86 Provincial Average	Patient Residence*
20% or more above	Regina, Moose Jaw
10-20% above	Saskatoon
Within 10%	Regina Rural, Moose Jaw Rural Prince Albert, North Battleford, Status Indians
10-20% below	Yorkton, Yorkton Rural, Saskatoon Rural, North Battleford Rural
More than 20% below	Prince Albert Rural, Northern Saskatchewan

*Regional figures were first age-sex adjusted to the 1986 provincial population.

Figure (Page)

° There was also significant regional variation in the use of technical specialists (anaesthesia, radiology, pathology) with especially high rates for the residents of Regina and Saskatoon. Some caution is advisable, however, as many of these services are provided outside the fee-for-service sector, i.e. either by the Provincial Lab or hospitals.

° A summary of the 1985/86 levels and the changes since 1977/78 has been provided below: III to VI (33-6)

Services Provided By:	1977/78 Cost/Person	Change In Use/Person	1985/86 Cost/Person
General Practice	Rural 25% Above Urban	Urban, 12.5% Rural, -2.7%	Rural 9% Above Urban
Medical Specialists	Urban 112% Above Rural	Urban, 23.3% Rural, 47.0%	Urban 80% Above rural
Surgical Specialists	Urban 59% Above Rural	Urban, 15.4% Rural, 37.1%	Urban 33% Above Rural
Technical Specialists	Urban 192% Above Rural	Urban, 45.3% Rural, 73.9%	Urban 150% Above Rural
All Physicians	Urban 18% Above Rural	Urban, 19.6% Rural, 13.0%	Urban 21% Above Rural

Note: All figures have been age-sex adjusted to the 1986 provincial population.

Changes in volumes and patterns of use of general practitioner services, especially in urban areas

° Decline in age-sex adjusted use per person for rural residents of 2.7 percent; increases for urban residents of 12.5 percent and for Status Indians of 8.4 percent. Increase for all residents between 1977/78 and 1985/86 of 4.4 percent.

° Major growth in urban areas was due to GP office visits (general and specific assessments) which in 1985/86 represented 65 percent of GP payments. VII (37)

Figure (Page)

- Specific assessments (age-sex adjusted) were up 5.6 percent per person in 1985/86 over 1977/78, with the following breakdown: urban residents, 18.3 percent increase; rural residents, 4.0 percent decrease; Status Indians, 12.5 percent increase. VIII (38)

- Services associated with hospitals (major surgery, obstetrics, anaesthesia and hospital visits) were down in all patient locations.

- The average number of GPs seen by each patient increased by 8 percent between 1977/78 and 1985/86; for Regina and Saskatoon patients, 30 percent.

- These patterns appear to follow manpower trends, i.e. increased availability of physicians (GPs and specialists) in urban areas with GPs facing greater competition from specialists with respect to the provision of hospital services. In all of the rural areas, except Prince Albert Rural, there was a decrease in the per capita supply of GPs and a corresponding decrease in the use per person of GP services.

Increase in the number of consultations provided by medical and surgical specialists

- Between 1977/78 and 1985/86, physician consultations per person (age-sex adjusted) increased by 34.2 percent. This was almost double the growth for all physician services of 17.7 percent.

- Approximately 93 percent of 1985/86 payments for consultations went to medical and surgical specialists. Growth in use per person (age-sex adjusted) was as follows: IX (39)

	Consultations	All Services
Medical Specialists	30.3%	34.3%
Surgical Specialists	35.3%	25.6%
All Physicians	34.2%	17.7%

- There has been some "catch-up" in the use of consultations by rural residents, i.e. their increase in use per person at 44.4 percent was significantly higher than that for urban residents at 24.3 percent, both figures age-sex adjusted to the 1986 provincial population. X (40)

- Urban residents still receive more consultations. In 1985/86, age-sex adjusted use per person was 56.2 percent higher for urban than rural residents.

Figure (Page)

Increase in the use of diagnostic services (fee-for-service)

° Largest increase in use per person of any of the approximately twenty types of physician service categories. XI (41)

° Use more than doubled over eight years. Significant increases were found for each of the four broad physician groups considered, i.e. general practitioners and medical, surgical, and technical specialists.

° Introduction of new technology had a significant impact. For example, ultrasound interpretation was added to the fee schedule between the two study years. The impact of new technology on health status was not assessed.

° Only fee-for-service information was considered. Further study is required to include diagnostic services funded entirely through hospital budgets.

Volume and patterns of surgical intervention

° According to physician service data, major surgery went up 9.7 percent per person between 1977/78 and 1985/86 after age-sex adjustment. [NOTE: The division of services between minor and major surgery is somewhat arbitrary and based only on the fee paid. The list of procedures included under these categories, however, was consistent for the two study years.] XII (42)

° At least at this aggregate level of measurement, the use per person of major surgery had a very tight regional distribution. In 1985/86 for example, use per person for urban residents was 11.3 percent higher than that for rural residents, after age-sex adjustment. When individual procedures are considered, the regional variation can be wider.

° Major surgery has become more specialized. Age-sex adjusted use per person for major surgery provided by general practitioners was down 47.3 percent between 1985/86 and 1977/78; for services provided by surgical specialists, it was up 22.2 percent. As noted earlier, the overall increase was 9.7 percent.

° Levels of surgical intervention in obstetrics was up significantly, especially caesarean sections.

Figure (Page)

° Detailed information from hospital separation records indicates a significant change in the mix of surgery being performed. For example, separations per capita (no age-sex adjustment) declined between 1977/78 and 1985/86 for the following: appendectomy; tonsillectomy; prostatectomy; cholecystectomy; operations on hemorrhoids. The number of separations per capita increased for the following: hysterectomy; colostomy; lens extractions; caesarean sections; partial excision of large intestine; total hip replacement; laparotomy. XIII (43)

Budgetary impact of the increased use of prescription drugs

° Expenditures per person for drug material costs went from $15.72 in 1977/78 to $58.69 in 1985/86, an increase of 273.3 percent or 17.9 percent each year. XIV (44)

° Physicians sometimes indicate "no sub" on prescriptions, which prevents substitution in favour of lower-priced generics. The impact in 1985/86 was to increase expenditures by approximately $8.00 per person.

	Actual Expenditure	Lowest Cost Generic*	Difference
1977/78	$ 15.72	$ 14.95	$ 0.77
1985/86	$ 58.69	$ 50.71	$ 7.98

* Estimated cost for the year if reimbursement had always been at the lowest cost alternative.

° In addition to the above, drugs were added to or dropped from the formulary over the study period. Almost half of all 1985/86 expenditures were for new products. Some of this represented new strengths and forms of active ingredients that were available in 1977/78, but the majority simply represented completely brand new products.

	Drug Material Cost Per Person*	
	1977/78	1985/86
Drugs Added to Formulary	---	$ 24.92
Drugs Dropped from Formulary	$ 1.07	---
Drugs Common to Both Study Years	13.88	25.79
Total	$ 14.95	$ 50.71

*Based on reimbursement at the lowest cost alternative, i.e. impact of "no-sub" has been eliminated.

Figure (Page)

° For products common to both study years, expenditures per person increased by 85.8 percent, i.e. from $13.88 to $25.79 with both amounts based on reimbursement at the lowest cost alternative. Prices were estimated to have increased by 29.6 percent, implying an increase in volume per person of 43.4 percent. It should be remembered that, if anything, this represents an understatement of the growth in usage as it deals only with products common to both study years. Whereas some of the "new" drugs represented new therapies, some would have simply represented substitutes for products available in 1977/78.

Price Increase*	29.6%
Increased Volume per Person	43.4%
Total Increase+	85.8%

* Low price increase partly resulted from the use of the lowest cost generic in each year to construct the price index. For many products, introduction of a generic between the two study years resulted in a price decrease.

+ Component increases compound to "Total".

° Only a very small proportion of the increased volume per person can be attributed to the aging of the population.

Aging	3.3%
Utilization	38.8%
Volume per Person*	43.4%

* Component increases compound to the total increase in "Volume per Person".

° In summary, after eliminating the impact of price, the major components of the increase in expenditures for out-patient drugs were as follows:

- introduction of new products added about $25 million to 1985/86 expenditures
- increase in the tendency by physicians to indicate "no-sub" added about $8 million
- significant increase in the use of products common to the formularies of both study years added about $7.5 million.

Figure (Page)

° No attempt was made to measure the impact of the changes to the government's prescription drug program introduced in July 1987.

Change in the volumes and patterns of use of Cardiovascular Drugs

° Cardiovascular drugs represented 13.4 percent of 1977/78 expenditures; 21.5 percent of 1985/86 expenditures. Figures have been age-sex adjusted to the 1986 provincial population.

° Most of 1985/86 expenditure was for new products. XV (45)

° Drugs common to both study years increased in use per person (age-sex adjusted) by 50.1 percent; the newly introduced drugs did not displace the old drugs.

° Serious concerns over the much higher (44.2 percent) use per person by Regina residents compared to Saskatoon residents in 1985/86 after age-sex adjustment. XVI (46)

Changes in volumes and patterns of use of Central Nervous System (CNS) Drugs

° CNS drugs represented 22.0 percent of expenditure in 1977/78; 25.0 percent in 1985/86. Figures have been age-sex adjusted to the 1986 provincial population.

° Over half of 1985/86 expenditure was for "new" drugs; age-sex adjusted use per person of common drugs decreased by 9.6 percent. XVII (47)

° Much higher use in North Battleford and surrounding area.

° Relatively high levels of tranquilizer use by residents in all of the smaller cities, i.e. Moose Jaw, Prince Albert, Swift Current, North Battleford, and Yorkton. XVIII (48)

° Relatively high levels of sedative use in all of the smaller cities.

° Large increases in the use of psychotherapeutic agents between 1985/86 and 1977/78, especially in the smaller cities. XIX (49)

° High levels of use of psychotherapeutic agents in the smaller cities may be related to the presence of relatively large psychiatric units in regional hospitals.

° Females continue to use more psychotherapeutic agents than males.

Figure (Page)

Changes in the volumes and patterns of use of Anti-Infective Agents

- Anti-infective agents represented 9.4 percent of expenditure in 1985/86, down from 15.8 percent in 1977/78, after age-sex adjustment. XX (50)
- Drop in share due to very low price increases for anti-infectives. [NOTE: Price index based on the lowest cost alternative in the two study years.]
- Large increases in use in all regions. For the province, age-sex adjusted use per person was up 83.6 percent. Major increases were for the cephalosporins, erythromycins and penicillins.
- Regional pattern very tight, though somewhat higher levels of use by Prince Albert and Regina residents.

Increasing proportion of prescriptions with physicians indicating "no substitution"

- Growth in "no-sub" has been dramatic.
- Added approximately $8 million to total drug expenditures (SPDP) in 1985/86. XXI (51)
- Impact of recent changes to the drug plan unknown.

Roles for hospitals outside Regina and Saskatoon

- Rural residents and those of the smaller cities were the highest users of hospital days; Regina and Saskatoon residents the lowest.
- Higher levels of use by rural residents can be attributed to community and rural hospitals. These were used almost exclusively by rural residents. For their surgical needs, rural residents also made significant use of regional and base hospitals.
- In 1985/86, community and rural hospitals accounted for over one-third of total acute care (level 6) days in the province, but:
  - only an estimated 8.1% of those hospital days associated with a surgical procedure
  - only an estimated 18.4% of those hospital days associated with a diagnostic or therapeutic procedure.

Figure (Page)

XXII (52)

° Very few of the acute care (level 6) days in these hospitals were associated with a procedure. This is markedly different from other hospitals, as shown below.

PERCENT OF 1985/86 LEVEL 6 DAYS BY THE TYPE OF PROCEDURE*

Primary Procedure was:	Base Hospitals	Regional Hospitals	Community and Rural	All Hospitals
Surgery	62.6%	31.5	8.9	36.1
Diagnostic/Therapeutic	14.3	12.1	5.9	10.6
No Procedure Coded	23.1	56.4	85.2	53.3
Total	100.0	100.0	100.0	100.0

*Estimated from the utilization study.

° Given the above, one would expect that the greatest difference between residents of the two major cities and those living elsewhere in the province would have been for acute care (level 6) days with no associated procedure. As shown below, this was in fact the case.

1985/86 LEVEL 6 DAYS PER 1,000 POPULATION
BY RESIDENCE AND PRESENCE/ABSENCE OF
A PROCEDURE

Patient Residence	With a Procedure	No Procedure Coded	All Level 6
Regina	698	326	1,024
Saskatoon	635	249	884
Other City*	796	872	1,668
Rural	669	1,067	1,736
All Residents+	692	790	1,482

*Moose Jaw, Prince Albert, North Battleford, Swift Current, Yorkton
+Includes Status Indians and the residents of Northern Saskatchewan

° When considering individual surgical procedures, there were only a select few of these being performed in the community and rural hospitals. The following list provides examples where at least 85 percent of the procedures are performed in the regional or base hospitals: lens extract; recon. operation of middle ear; repair/plastic of nose; open heart; other heart; partial excision of large intestine; colostomy; gallbladder; cholecystectomy; laparotomy; prostatectomy; operations on the fallopian tubes; hysterectomies; fractures requiring internal fix; total hip replacements; other operations on joint structures.

Figure (Page)

° There were a few procedures where a significant level of work was carried out in rural and community hospitals, e.g. remove/restore teeth; invasive diagnostic on kidneys; episiotomy. Even in those cases, however, most of the work took place in the regional and base hospitals.

° All of this is related to Saskatchewan having one of the highest levels of days per capita of any province. Inter-provincial comparisons showed that we were not dramatically different from the rest of the country in terms of our procedural rates per capita or the average lengths of stay associated with those procedures. We were much higher with respect to non-procedural level 6 days. As shown above, this was related to community and rural hospitals and, to a somewhat lesser extent, regional hospitals. XXIII (53)

° The data described above supports other recent studies which have raised concerns over the roles for hospitals outside Regina and Saskatoon. The Committee believes that further work, suggestions for which are provided later, would be useful in more fully describing the use of these hospitals.

Increases in the per capita use of services by the senior population

° Increases in use per person have tended to be greatest amongst seniors for physician, drug and hospital services.

° Most dramatic change has occurred with hospital services. In 1985/86, seniors accounted for 52 percent of all hospital days, up from 41 percent in 1977/78. Over this period, the percentage of persons over age 65 increased from 11.9 to 13.2 percent.

XXIV (54)

	Percent of Days for Persons 65+	
	1977/78	1985/86
Acute Care	43.0%	51.8%
All Levels	41.4%	52.5%

Figure (Page)

° Change in the use per person of physician services, 1977/78 to 1985/86.

Age Group	Percent Change
under 14	16.0%
15-44	14.1
45-64	22.3
65-74	26.8
75-84	26.9
85+	29.7
All Ages	
- adjusted	17.7
- unadjusted	20.6

XXV (55)

° Seniors had relatively high drug expenditures per person for products introduced between the study years as well as relatively large increases in use per person for products common to both of the study years.

Age Group	1985/86 Cost/Person "New" Drugs*	Change in Use/Person 77/78 to 85/86+
Under 14	$ 5.32	68.1%
15-44	13.07	29.4
45-64	43.75	38.6
65-74	69.11	41.8
75-84	78.12	44.7
85+	64.67	66.9
All Ages		
- adjusted	24.92	38.8
- unadjusted	24.92	43.4

XXVI (56)

* 1985/86 expenditures per person for drugs introduced to the formulary (new active ingredients, strengths, and/or forms) after 1977/78. Based on reimbursement at the lowest cost alternative.

+ Change in use per person of drugs common to the formularies of both the study years.

° Combined with their increasing numbers, the increases in the use of services by the elderly may lead to service "shortages" in the next ten years or so.

Figure
(Page)

Use of services by Status Indians remains high

° Of the groups studied, Status Indians had the highest levels of use. Though not a part of this study, this can be related to lower levels of health status arising from economic and social circumstances.

° After age-sex adjustment, Status Indians received about 31 percent more physician services per person in 1985/86 than did the general population. Use of specialist services was approximately the same; use of general practitioners was 59 percent higher. XXVII (57)

° The following is based on age-sex adjusted hospital data for 1985/86.

	Status Indians	General Population	Percent Difference
Days per 1,000 Pop.	4,274	1,933	121%
Separations per 1,000 Pop.	273	145	88%
Days per Separation	8.0	9.0	-11%

RECOMMENDATIONS AND SUGGESTIONS FOR FURTHER STUDY

The Review Committee believes that the activities to date have been of benefit both to government and to provider groups. We therefore recommend that a Standing Committee on the Patterns of Health Service Usage be established which would be responsible for the following:

- monitor, on an on-going basis, the trends in the patterns of health service usage;
- review and initiate special studies into health service usage;
- report on a regular basis to the Minister of Health the results of any activities and any recommendations for public policy.

Recommendation: That the Minister of Health establish a Standing Committee on the Patterns of Health Service Usage.

One of the major benefits of the exercise to date has been to provide the participants with a much clearer picture of the dynamics of the health care system. We believe that others, including the general public, could also benefit from this and would therefore recommend the following:

Recommendation: That the results of the Review Committee's work, including the full report of the Technical Group, be made readily available to interested parties.

Recommendation: That the proposed Standing Committee on the Patterns of Health Service Usage be requested to develop a strategy for disseminating key pieces of information from the Study into the Growth in Use of Health Services to the public.

With regard to special studies to further investigate the changes in usage, the Review Committee suggests that three areas be given priority, as provided in the following:

Recommendation: That the proposed Standing Committee on Patterns of Health Service Usage be requested to give the following areas of special study top priority:

1. **Changes in the use of services by the elderly, including the use of special care homes and the home care program.**
2. **Changes and regional variations in the treatment of cardiovascular disease.**
3. **Clarification of the roles of regional, community and rural hospitals.**

With regard to the first proposal, the Committee would suggest a review of Saskatchewan Health data by patient condition. Detailed information of this type was collected, but not analyzed, during the course of this project and could serve as a useful starting point. Consideration should also be given to collecting information on continuing care (special care homes and home care) and to examining the interaction of health services, e.g. use of physicians by home care clients or the use of drugs and subsequent hospitalization.

With regard to the second proposal, the Committee believes that the examination of a specific condition would serve as a useful pilot project. We believe that it is still an open question as to whether or not government and providers can successfully carry out this type of study and mutually agree to a set of specific policy actions. There were several reasons why cardiovascular disease was chosen:

- Saskatchewan is currently involved in a national study of cardiovascular disease which could provide useful insights.

- Regional variations in the use of cardiovascular drugs was a major concern identified by the Committee.

- The introduction of new drug therapies provides an interesting opportunity to examine these alternatives against others, such as surgery. How are regional variations in the use of cardiovascular drugs related to that in cardiovascular surgery?

- The treatment of cardiovascular disease consumes a significant proportion of health resources. This will probably expand as the population ages.

Finally, in regard to the third proposal, the Committee believes that the roles of hospitals outside Regina and Saskatoon should receive further study. Specifically we would suggest the following:

a) Hospital separation records be examined in the context of the entire system and not simply as a single event (e.g. separations from base to rural hospitals following major surgery to allow for convalescence.)

b) Collate hospital separation and physician billing records, again to more clearly define current roles.

Careful analyses of these, and perhaps other data, would assist in the understanding of a number of issues:

- amount of acute care which would be more appropriately labelled as long-term care

- differences in the mix of medical and surgical admissions between base and other hospitals

- use of rural and community hospitals for convalescence after acute care in regional or base hospitals

- changes in all of the above over time and how this has affected hospital roles.

Given the breadth of the present study, any number of future projects could have been proposed. We have limited ourselves to the three mentioned above for practical reasons and because there was mutual agreement as to the importance of the underlying issues. The following topics, however, also received serious consideration by the Committee.

° Investigate changes in the treatment of selected conditions. Major items to be investigated include differences in utilization patterns (e.g. use of specialists, number of different physicians seen, hospitalization, drugs, etc.) by factors such as patient residence and location of first contact (medi-centres, traditional fee-for-service, emergency ward). The list of conditions considered included the following:

  - respiratory conditions in children

  - obstetrics

  - psychiatric diagnoses

° Investigate changes in GP practice patterns in urban areas.

° Health service use and health amongst Status Indians

Our activities to date have served to enhance the information base and to raise several concerns. In most cases, these concerns do not in themselves call for action in terms of public policy. Before doing that we have to collect as much information as possible as to the causative factors behind these changes and their impact on the health status of the population.

There was one area of concern, however, where we believe immediate action is called for. This was the regional variations and spectacular increases in the use of prescription drugs, especially anti-infective agents, cardiovascular drugs, and central nervous system drugs. Though further study is required, we believe there is enough evidence to warrant the following two recommendations:

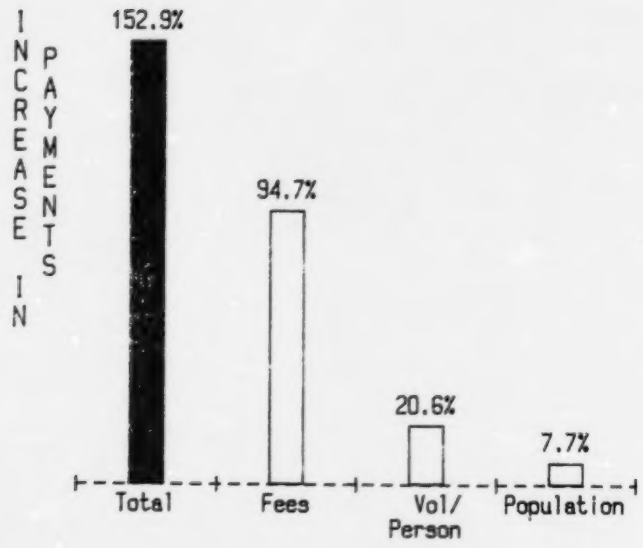
Recommendation: That a patient and physician drug education program be established, with anti-infective agents being the first target.

Recommendation: That the Saskatchewan College of Physicians and Surgeons be requested to investigate prescribing patterns for cardiovascular drugs.

Our efforts over the past year and a half have convinced us that there is a useful role for joint studies into health service usage. Our recommendations reflect this confidence in a potentially powerful vehicle for policy review in the health care sector.

STUDY INTO THE GROWTH IN USE OF HEALTH SERVICES: EXHIBITS

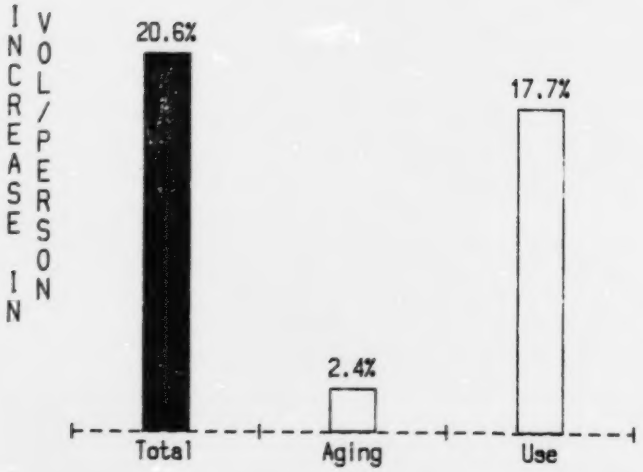
FIGURE I: COMPONENTS OF THE TOTAL INCREASE IN EXPENDITURES FOR PHYSICIAN SERVICES, 1977/78 TO 1985/86



*Total expenditures for the study population went from $65.3M in 1977/78 to $165.3M in 1985/86, or an increase of 152.9%.

* Total increase in expenditure can be broken down into three components: increase in fees, 94.7%; population growth, 7.7%; increase in the volume of services per person, 20.6%.

(Note: These figures do not add to the total increase because of the multiplicative impact of fees, volume per person, and population on total expenditures. These three items compound to the total increase of 152.9 percent.)



* Increase in volume per person can be broken down into two components: increase attributable to the 'aging' of the population, 2.4%; general increase in the use of physician services, 17.7%.

* Note:

- major factor was the increase in the fees paid to physicians
- population growth and aging had only a minor impact
- 'use' increased by 2.1% each year

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FIGURE II: BUDGETARY IMPACT OF THE INCREASE IN USE OF PHYSICIAN SERVICES, 1977/78 TO 1985/86

1985/86 ACTUAL	$165.3 M
1977/78 ADJUSTED (FEES, POPULATION, AGING)	$140.2M
DOLLAR IMPACT OF UTILIZATION	25.1M

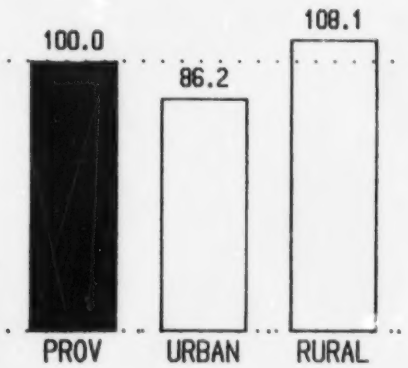
* ACTUAL 1977/78 PAYMENTS HAVE BEEN ADJUSTED FOR THE INCREASE IN FEES (94.7%), POPULATION GROWTH (7.7%), AND POPULATION AGING (2.4%). COMBINED, THESE FACTORS WOULD HAVE LED TO A 114.7 PERCENT INCREASE IN EXPENDITURES.

* THE DIFFERENCE BETWEEN 1977/78 ADJUSTED AND 1985/86 ACTUAL EXPENDITURES PROVIDES AN ESTIMATE OF THE DOLLAR IMPACT OF THE INCREASED USE OF SERVICES (AGE-SEX ADJUSTED) OF $25.1M.

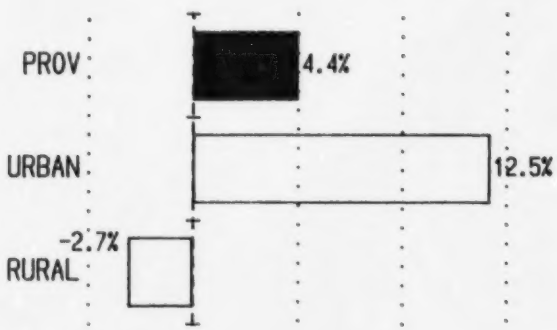
* BASED ON 1985/86 EXPENDITURE LEVELS, $25.1M WOULD BE SUFFICIENT TO FUND THE COST OF PHYSICIAN SERVICES FOR A CITY OF 150,000 PEOPLE.

FIGURE III: URBAN RESIDENTS USE SOMEWHAT FEWER GENERAL PRACTITIONER SERVICES THAN RURAL RESIDENTS, BUT HAVE BEEN CATCHING UP...

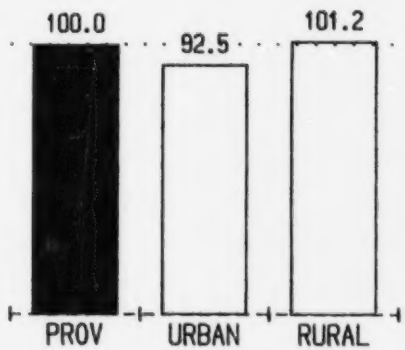
1977/78 USE INDEX



GROWTH IN AGE-SEX ADJUSTED USE PER PERSON



1985/86 USE INDEX



1977/78 Cost/Person
(Age-Sex adjusted):
Prov $42.30
Urban $36.46
Rural $45.74

1985/86 Cost/Person
(Age-Sex adjusted):
Prov $93.91
Urban $86.87
Rural $95.00

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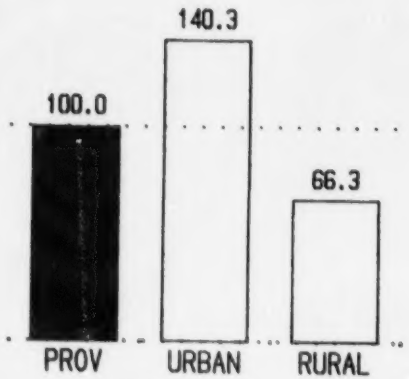
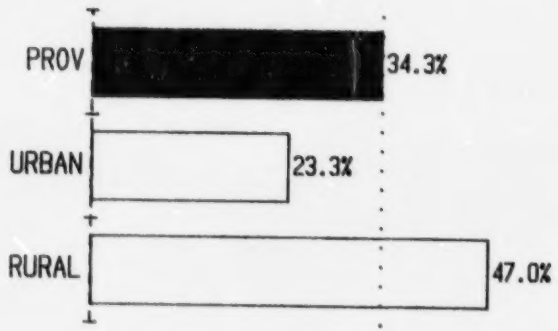
FIGURE IV: RURAL RESIDENTS USE SIGNIFICANTLY FEWER MEDICAL SPECIALIST SERVICES THAN URBAN RESIDENTS, BUT HAVE BEEN CATCHING UP...

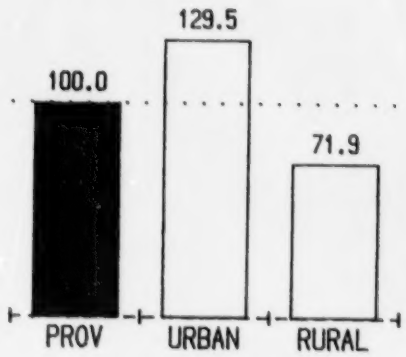
1977/78 USE INDEX



GROWTH IN AGE-SEX ADJUSTED USE PER PERSON



1985/86 USE INDEX



1977/78 Cost/Person
(Age-Sex adjusted):
Prov $9.22
Urban $12.94
Rural $6.11

1985/86 Cost/Person
(Age-Sex adjusted):
Prov $21.41
Urban $27.72
Rural $15.40

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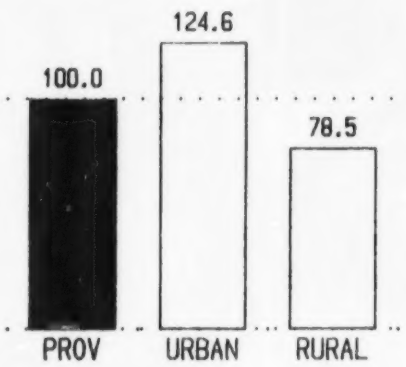
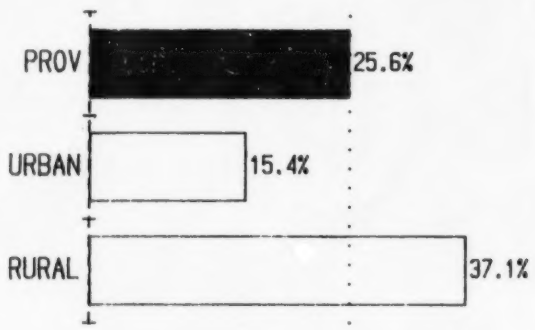
FIGURE V: RURAL RESIDENTS USE SIGNIFICANTLY FEWER SURGICAL SPECIALIST SERVICES THAN URBAN RESIDENTS, BUT HAVE BEEN CATCHING UP...

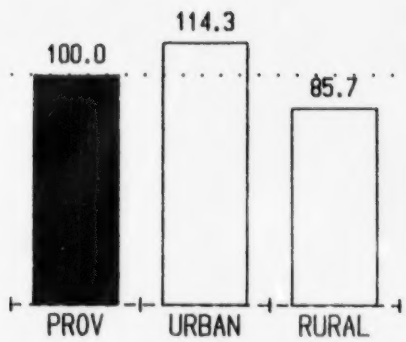
1977/78 USE INDEX



GROWTH IN AGE-SEX ADJUSTED USE PER PERSON



1985/86 USE INDEX



1977/78 Cost/Person
(Age-Sex adjusted):
Prov $15.52
Urban $19.34
Rural $12.19

1985/86 Cost/Person
(Age-Sex adjusted):
Prov $32.99
Urban $37.70
Rural $28.28

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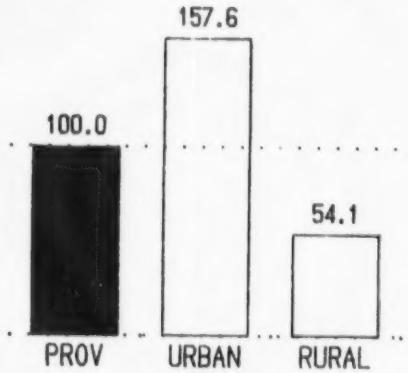
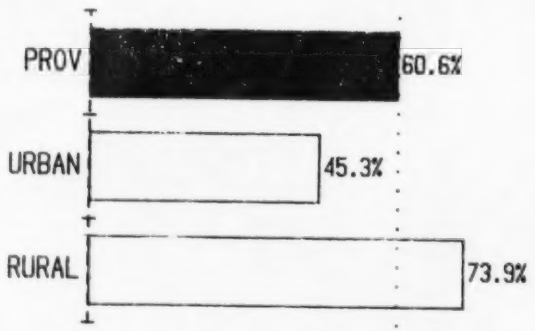
FIGURE VI: RURAL RESIDENTS USE SIGNIFICANTLY FEWER TECHNICAL SPECIALIST SERVICES THAN URBAN RESIDENTS, BUT HAVE BEEN CATCHING UP...

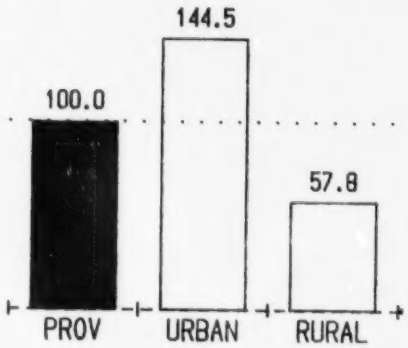
1977/78 USE INDEX



GROWTH IN AGE-SEX ADJUSTED USE PER PERSON



1985/86 USE INDEX



1977/78 Cost/Person
(Age-Sex adjusted):
Prov $7.01
Urban $11.05
Rural $3.79

1985/86 Cost/Person
(Age-Sex adjusted):
Prov $21.43
Urban $30.97
Rural $12.39

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FIGURE VII: CHANGE IN USE PER PERSON (AGE-SEX ADJUSTED)
FOR SELECTED MAJOR PURPOSE GROUPS (MPG),
1977/78 TO 1985/86

MPG	% OF 1985/86 GP PAYMENT	CHANGE IN USE: GPs	CHANGE IN USE: ALL PHY
GENERAL ASSESS	10.8%	13.0%	15.9%
SPECIFIC ASSESS	54.1	5.6	4.5
HOSPITAL CARE	6.3	-20.7	-14.6
MAJOR SURGERY	1.7	-47.3	9.7
OBSTETRICS	1.9	-21.2	-9.7
ANAESTHESIA	2.5	-5.7	16.5
SURGICAL ASSIST	1.5	3.7	-4.0
ALL SERVICES	100.0	4.4	17.8

* GROWTH IN USE OF GP SERVICES CONCENTRATED IN GENERAL AND SPECIFIC ASSESSMENTS (OFFICE VISITS.)

* GP SERVICES ASSOCIATED WITH HOSPITALS WENT DOWN; CORRESPONDING INCREASE IN USE OF SPECIALISTS.

FIGURE VIII: CHANGE IN USE PER PERSON (AGE-SEX ADJUSTED) FOR SPECIFIC ASSESSMENTS, 1977/78 TO 1985/86

	URBAN RESIDENTS	RURAL RESIDENTS
REGINA	23.0%	-0.2%
SASKATOON	15.9	-5.1
MOOSE JAW	18.8	-14.2
PRINCE ALBERT	11.1	-0.3
NORTH BATTLEFORD	12.7	-7.0
YORKTON	11.8	-6.9
NORTHERN SASKATCHEWAN	---	19.9
STATUS INDIANS	---	12.5

* SPECIFIC ASSESSMENTS ACCOUNTED FOR 54% OF GP PAYMENTS IN 1985/86.

* OVERALL INCREASE IN USE PER PERSON OF 5.6% BETWEEN 1977/78 AND 1985/86; FOR CITY RESIDENTS 18.3%; RURAL RESIDENTS -4.0%; STATUS INDIANS, 12.5%.

* DESPITE LARGE INCREASE, NORTHERN RESIDENTS ONLY 78% OF PROVINCIAL AVERAGE IN 1985/86. STATUS INDIANS 55% ABOVE PROVINCIAL AVERAGE.

* CHANGES REFLECT GROWTH IN GP MANPOWER IN URBAN AREAS; DECLINE IN RURAL.

FIGURE IX: CHANGE IN USE PER PERSON OF PHYSICIAN CONSULTATIONS.
1977/78 TO 1985/86

	CHANGE IN USE/PERSON: CONSULTS	ALL SERVICES	% OF 1985/86 PAYMENTS
GENERAL PRACTITIONERS	52.6	4.4	1.0
MEDICAL SPECIALISTS	30.3	34.3	30.8
SURGICAL SPECIALISTS	35.3	25.6	21.3
TECHNICAL SPECIALISTS	215.6	60.6	0.3
ALL PHYSICIANS	~~343.2~~ 34.2	17.7	8.6

NOTE: ALL FIGURES HAVE BEEN AGE-SEX ADJUSTED TO THE 1986 PROVINCIAL POPULATION.

* AT 34.2%, GROWTH IN THE PER CAPITA USE OF CONSULTATIONS WAS ALMOST DOUBLE THAT FOR ALL PHYSICIAN SERVICES.

* LARGEST INCREASES WERE FOR CONSULTATIONS PROVIDED BY GENERAL PRACTITIONERS AND AND TECHNICAL SPECIALISTS. CONSULTATIONS REPRESENT LESS THAN ONE PERCENT OF PAYMENTS FOR THESE SPECIALTIES.

* APPROXIMATELY 93 PERCENT OF 1985/86 PAYMENTS FOR CONSULTATIONS WENT TO MEDICAL AND SURGICAL SPECIALISTS. GROWTH FOR THESE GROUPS SIMILAR TO THAT FOR THE OVERALL GROWTH IN SERVICES.

FIGURE X: COMPARISON OF THE USE OF CONSULTATIONS.

1977/78 AND 1985/86

	1977/78 USE INDEX	CHANGE IN USE PER PERSON	1985/86 USE INDEX
MEDICAL			
URBAN	135.0	22.8%	127.5
RURAL	71.6	37.1%	75.2
STATUS INDIAN	78.9	61.9%	98.5
ALL	100.0	30.3%	100.0
SURGICAL			
URBAN	133.0	23.7%	121.5
RURAL	73.1	48.5%	80.5
STATUS INDIAN	67.3	78.0%	89.3
ALL	100.0	35.3%	100.0
ALL PHYSICIANS			
URBAN	133.1	24.3%	123.1
RURAL	73.1	44.4%	78.8
STATUS INDIAN	75.0	72.1%	97.1
ALL	100.0	34.2%	100.0

NOTE: ALL FIGURES HAVE BEEN AGE-SEX ADJUSTED TO THE 1986 PROVINCIAL POPULATION.

* SIGNIFICANT INCREASES IN ALL AREAS OF THE PROVINCE. GREATER THAN THE INCREASE FOR ALL SERVICES OF 17.7 PERCENT.

* INCREASES IN USE SIGNIFICANTLY HIGHER FOR RURAL RESIDENTS AND STATUS INDIANS.

* URBAN RESIDENTS STILL RECEIVE MORE SERVICES: 56.2% MORE CONSULTATIONS PER PERSON IN 1985/86 WHEN COMPARED TO RURAL RESIDENTS.

* SIGNIFICANTLY HIGHER LEVELS OF USE FOR REGINA AND MOOSE JAW RESIDENTS.

FIGURE XI: CHANGE IN USE PER PERSON OF DIAGNOSTIC PROCEDURES.
1977/78 TO 1985/86

	CHANGE IN USE/PERSON: DIAG PROC	ALL SERVICES	% OF 1985/86 PAYMENTS
GENERAL PRACTITIONERS	22.7	4.4	2.0
MEDICAL SPECIALISTS	116.9	34.3	19.2
SURGICAL SPECIALISTS	179.3	25.6	9.7
TECHNICAL SPECIALISTS	766.8	60.6	9.8
ALL PHYSICIANS	117.1	17.7	6.6

NOTE: ALL FIGURES HAVE BEEN AGE-SEX ADJUSTED TO THE 1986 PROVINCIAL POPULATION.

* USE OF DIAGNOSTIC PROCEDURES MORE THAN DOUBLED OVER EIGHT YEARS.

* CAUTIONARY NOTES:
  A) FEE-FOR-SERVICE ONLY.
  B) EXCLUDING ULTRASOUND. THE INCREASE IN AGE-SEX ADJUSTED USE PER PERSON WAS 93.6 PERCENT; FOR TECHNICAL SPECIALISTS, 40.3 PERCENT.

FIGURE XII: EXPENDITURES AND CHANGES IN USE FOR MAJOR SURGERY.
1977/78 TO 1985/86

	1977/78 $/PERSON	CHANGE IN USE PER PERSON	1985/86 $/PERSON
URBAN	10.07	6.2%	17.61
RURAL	8.95	11.0%	15.82
STATUS INDIANS	9.87	15.0%	18.36
ALL RESIDENTS	9.31	9.7%	16.82

NOTE: ALL FIGURES AGE-SEX ADJUSTED TO THE 1986 PROVINCIAL POPULATION.

* APPROXIMATELY A TEN PERCENT INCREASE IN USE PER PERSON AFTER AGE-SEX ADJUSTMENT. LESS THAN THE OVERALL INCREASE OF 17.7%

* TIGHT DISTRIBUTION. IN 1985/86, URBAN RESIDENTS, 4.7 PERCENT ABOVE PROVINCIAL AVERAGE; RURAL RESIDENTS 5.9 PERCENT BELOW; STATUS INDIANS 9.2 PERCENT ABOVE.

* RESIDENTS OF REGINA AND MOOSE JAW APPROXIMATELY 11 PERCENT ABOVE THE 1985/86 PROVINCIAL AVERAGE.

* USE BY RESIDENTS OF REGINA 12 PERCENT ABOVE THOSE OF SASKATOON.

* IMPACT ON HEALTH STATUS WAS NOT MEASURED.

FIGURE XIII: CHANGE IN THE NUMBER OF SEPARATIONS PER CAPITA FOR SELECTED PROCEDURES, 1977/78 TO 1985/86

APPENDECTOMY	-23.9%
TONSILLECTOMY	-22.2%
PROSTATECTOMY	-19.3%
CHOLECYSTECTOMY	-17.1%
HEMORRHOIDS	-15.9%
INGUIN. HERNIA	- 3.3%
HYSTERECTOMY	4.0%
COLOSTOMY	16.1%
LENS EXTRACT	40.4%
C-SECTION	41.3%
PARTIAL EXC LG INTESTINE	50.5%
TOTAL HIP	56.5%
LAPARATOMY	90.5%

NOTE: FIGURES HAVE NOT BEEN AGE-SEX ADJUSTED.

* THOUGH PHYSICIAN BILLING DATA INDICATES A 10 PERCENT INCREASE IN MAJOR SURGERY, MORE DETAILED HOSPITAL DATA INDICATES THAT SERVICE MIX HAS CHANGED.

* PROBLEMS WITH HOSPITAL DATA:
  - ° LACK OF WEIGHTING SCHEME FOR PROCEDURES
  - ° USED PRIMARY PROCEDURE ONLY
  - ° PROBLEMS IN REPORTING OF DAY SURGERY

* BY SURGICAL CHAPTER (17), SEPARATIONS HAVE:
  - ° INCREASED FOR 10 CHAPTERS
  - ° DECREASED FOR 7 CHAPTERS

* NUMBER OF SEPARATIONS PER CAPITA WITH A SURGICAL PROCEDURE INCREASED 10.4%

FIGURE XIV: CHANGE IN DRUG MATERIAL COSTS (DMC) PER 100 PERSON, 1977/78 TO 1985/86

Calculation of DMC for Common Drugs

	77/78	85/86
1. No Sub:		
-Actual DMC	15.72	58.69
-Low Cost	14.95	50.71
2. New/Eliminated Drugs:		
-Drugs Added	-	24.92
-Eliminated	1.07	-
-Common Drugs	13.88	25.79
TOTAL	14.95	50.71

Breakdown of 1985/86 DMC for Common Drugs

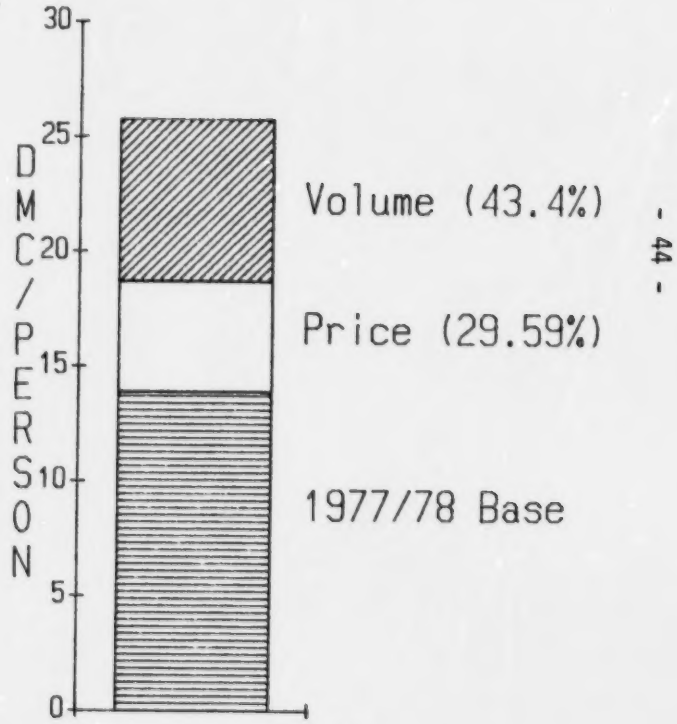
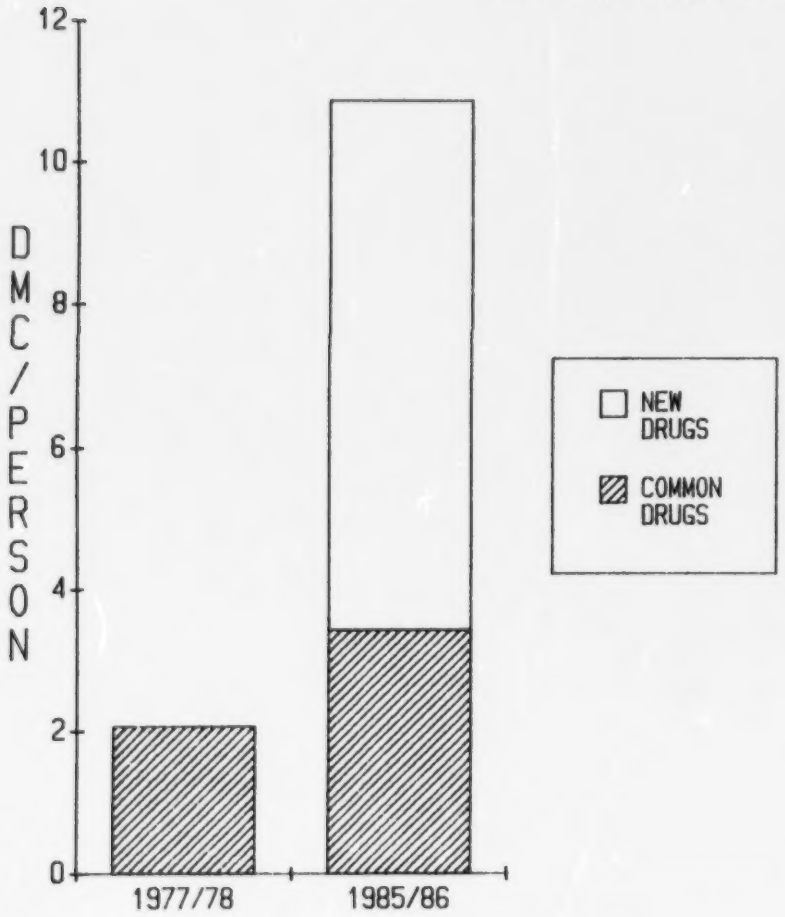


FIGURE XV: 1985/86 DMC PER PERSON AND CHANGES SINCE 1977/78
FOR CARDIOVASCULAR DRUGS



* Age-Sex Adjusted

* Graph is based on Lowest Cost Alternative

* Approximately 68% of expenditures for new active ingredients or new strengths/forms

* Expenditures increased 424.4%

* For common drugs(age-sex adjusted on a per person basis):

Price	15.7%
Use	50.1%
Total	73.7%

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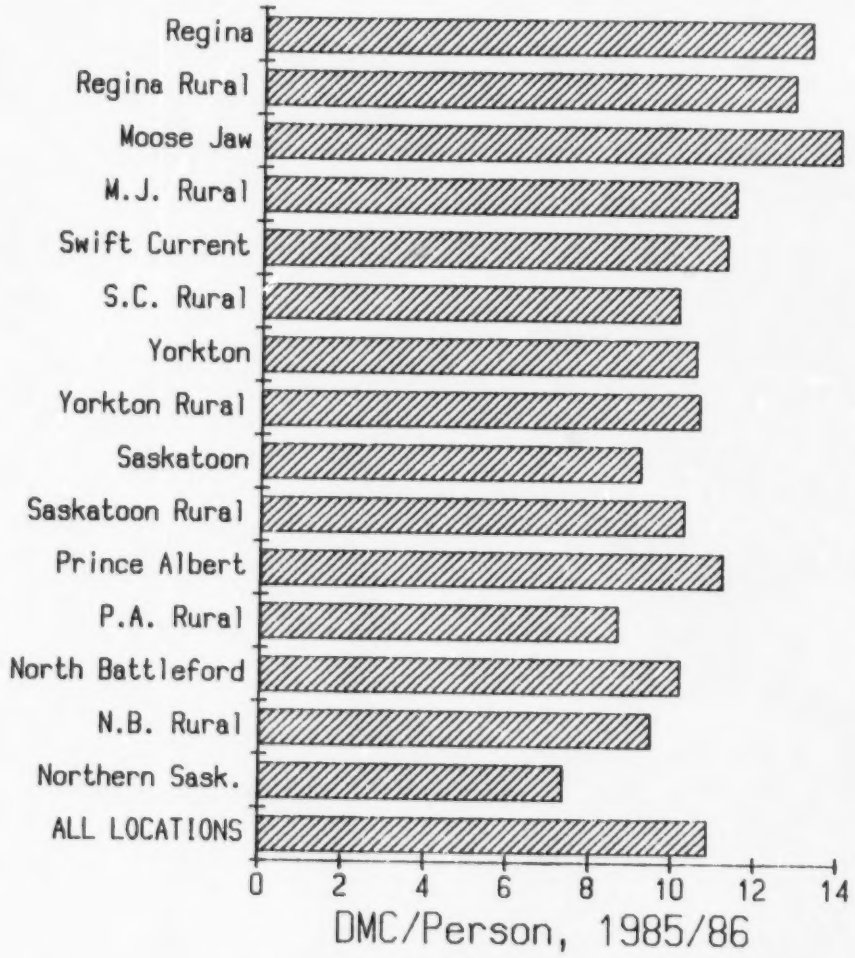
FIGURE XVI: 1985/86 DMC PER PERSON BY PATIENT RESIDENCE
FOR CARDIOVASCULAR DRUGS



* Significantly higher costs per person for Moose Jaw(28.5%), Regina(22.0%), and Regina Rural(18.2%). Next highest Moose Jaw Rural(5.2%).

* For Regina city and rural, due primarily to use of new products.

* Relatively low use in Saskatoon.

* Regina 44.2% above Saskatoon residents.

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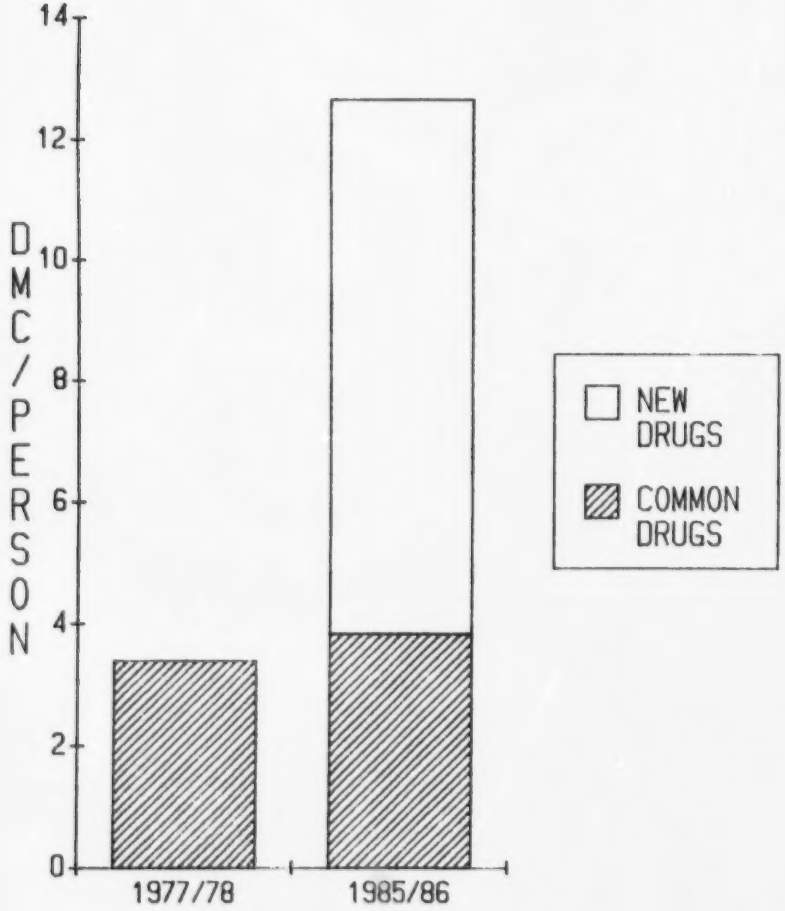
FIGURE XVII: 1985/86 DMC PER PERSON AND CHANGES SINCE 1977/78 FOR CNS DRUGS



* Age-sex adjusted.

* Graph is based on lowest cost alternative.

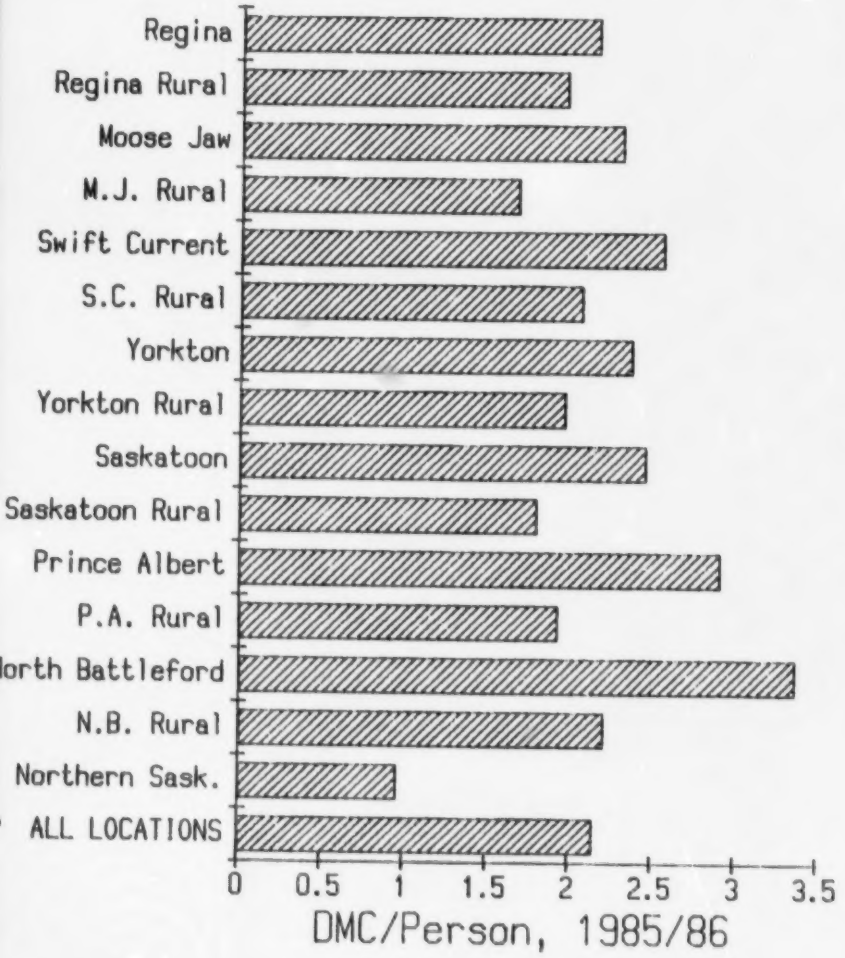
* 70% of expenditures for new active ingredients or new strengths/forms.

* Expenditures increased by 273%

* For common drugs(age-sex adjusted on per person basis):

Price	31.0%
Use	-9.6%
Total	18.4%

FIGURE XVIII: 1985/86 DMC PER PERSON BY PATIENT RESIDENCE
FOR PSYCHOTHERAPEUTIC AGENTS



* North Battleford 57% above provincial average. Antidepressants (33%); tranquilizers (142%).

* Strong rural-urban dichotomy.

* Use of common drugs up 34%.

FIGURE XIX: USE OF TRANQUILIZERS AND SEDATIVES -PATIENT RESIDENCES
WITH USE AT LEAST 20% ABOVE AVERAGE

Sub-Class	Residence	
Tranquilizers	North Battleford	142.2%
	Moose Jaw	93.3%
	Yorkton	80.0%
	Swift Current	75.6%
	Prince Albert	55.6%
Sedatives	North Battleford	78.7%
	Yorkton	43.4%
	Moose Jaw	32.7%
	Prince Albert	27.0%
	Swift Current	24.6%

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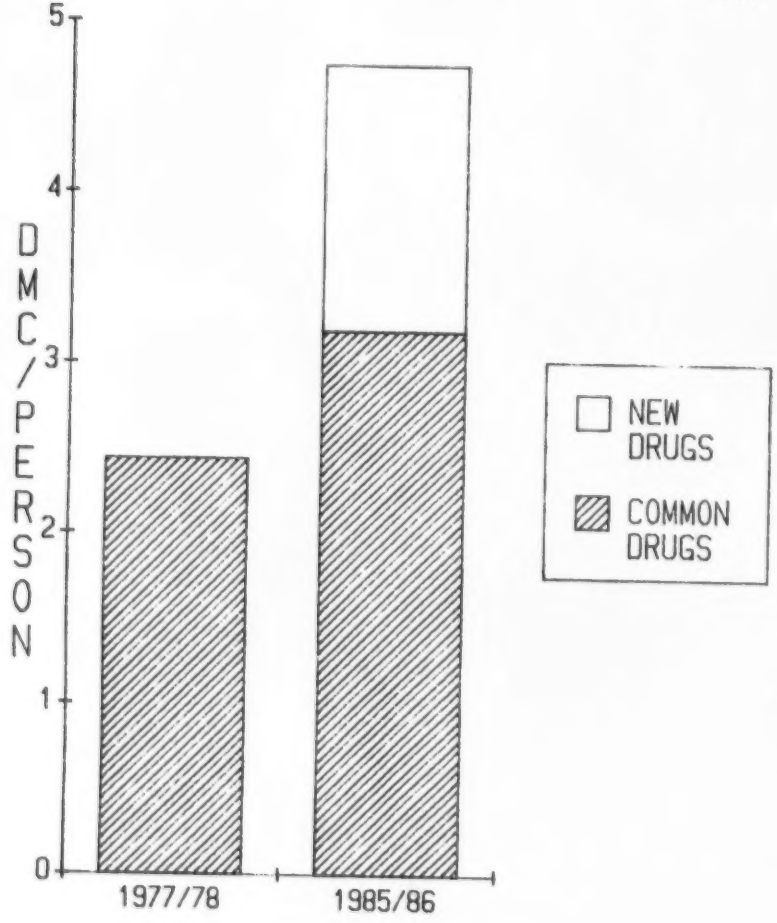
FIGURE XX: 1985/86 DMC PER PERSON AND CHANGES SINCE 1977/78
FOR ANTI-INFECTIVES



* Age-Sex adjusted.

* Graph is based on Lowest Cost Alternative.

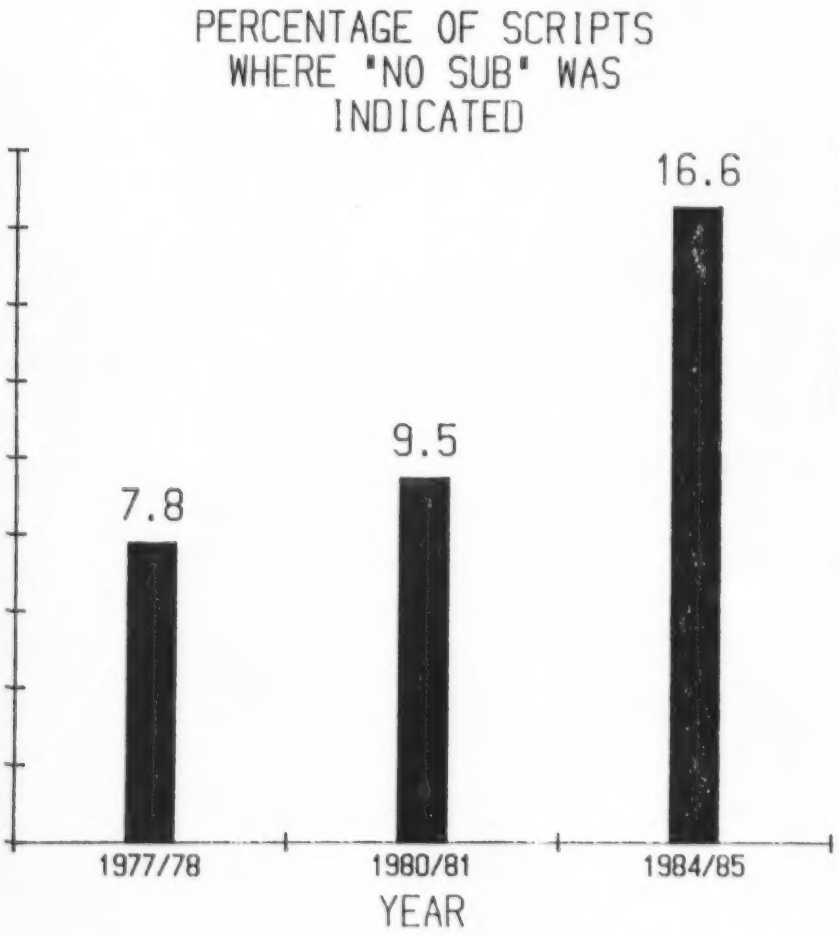
* 33% of expenditures for new drugs.

* Expenditures increased by 94%

* For common drugs(age-sex adjusted on a per person basis):

Price	-25.7%
Use	83.6%
Total	36.4%

FIGURE XXI: GROWTH IN "NO-SUB" PRESCRIPTIONS, 1977/78 TO 1985/86



* COST IMPLICATIONS OF ALLOWING FOR NO-SUB HAVE GROWN.

* IMPACT IN 1985/86 WAS TO INCREASE AVERAGE DMC PER PERSON FROM $50.71 TO $58.69, OR 15.7%.

* RECENT CHANGES TO DRUG PLAN MAY HAVE AN IMPACT.

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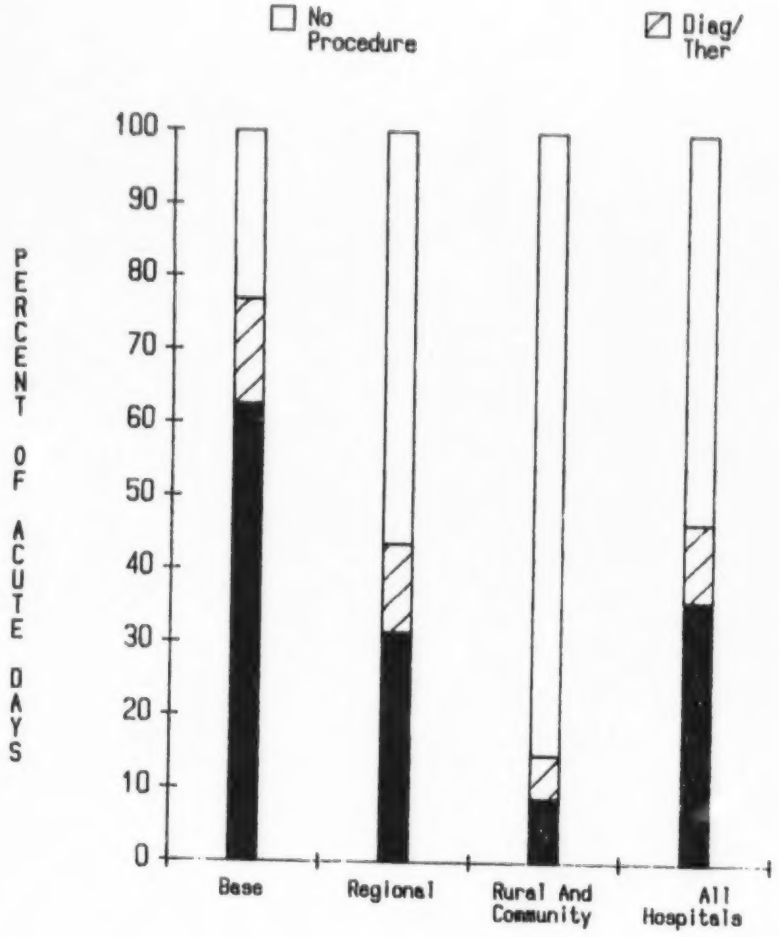
FIGURE XXII: PERCENT OF 1985/86 ACUTE CARE DAYS BY TYPE OF PROCEDURE



* Over 85% of acute care days in communtiy care and rural hospitals are for non-procedural separations. (Regional hospitals, 56.4%; base hospitals, 23.1%)

* Most non-procedural acute days take place in small hospitals which are used almost exclusively by rural residents. Implies that these days:

-account for the difference between rural and urban residents

-account for the difference between Saskatchewan and other provinces.

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FIGURE XXIII: 1985/86 ACUTE CARE DAYS PER 1,000 POPULATION BY PATIENT RESIDENCE AND PRESENCE/ABSENCE OF A PROCEDURE

PATIENT RESIDENCE	WITH A PROCEDURE	NO CODED PROCEDURE	ALL ACUTE DAYS
REGINA	698	326	1,024
SASKATOON	635	249	884
OTHER CITY	796	872	1,668
RURAL	669	1,067	1,736
ALL RESIDENTS	692	790	1,482

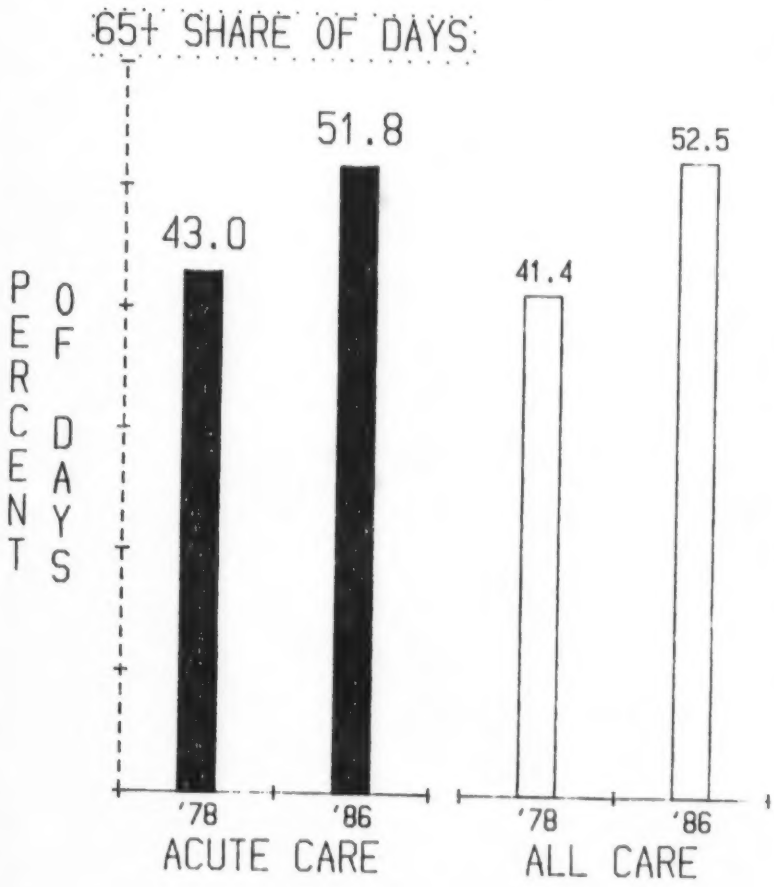
* PROCEDURAL DAYS RANGED FROM 91.8% (SASKATOON) TO 115.0% (OTHER CITY) OF THE PROVINCIAL AVERAGE.

* NON-PROCEDURAL DAYS RANGED FROM 31.5% (SASKATOON) TO 135.1% (RURAL) OF THE PROVINCIAL AVERAGE.

* DAYS (ALL LEVELS OF CARE) PER 1,000 POPULATION (STATISTICS CANADA):

	SASK.	CANADA	SASK. AS A % OF CANADA
WITH PROC	634	864	73.4
NO PROC	1,456	907	160.5
ALL DAYS	2,090	1,771	118.0

FIGURE XXIV: PERCENTAGE OF INPATIENT DAYS
FOR PERSONS AGED 65 OR OVER,
1977/78 AND 1985/86



* DAYS PER CAPITA DECREASED BY 4.5% BETWEEN 1977/78 AND 1985/86. FOR SENIORS, THEY INCREASED BY 12.7%.

* ACUTE CARE DAYS PER CAPITA WERE DOWN FOR ALL AGE GROUPS, BUT RELATIVELY LESS SO FOR SENIORS.

* WHAT APPEARS TO BE HAPPENING:
  - Fewer acute days (ALS decline and day surgery) means more long term.
  - Growth in procedures relatively faster for the elderly.

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FIGURE XXV: GROWTH IN THE USE OF PHYSICIAN SERVICES
BY AGE GROUP- AGE SEX ADJUSTED
1977/78 TO 1985/86

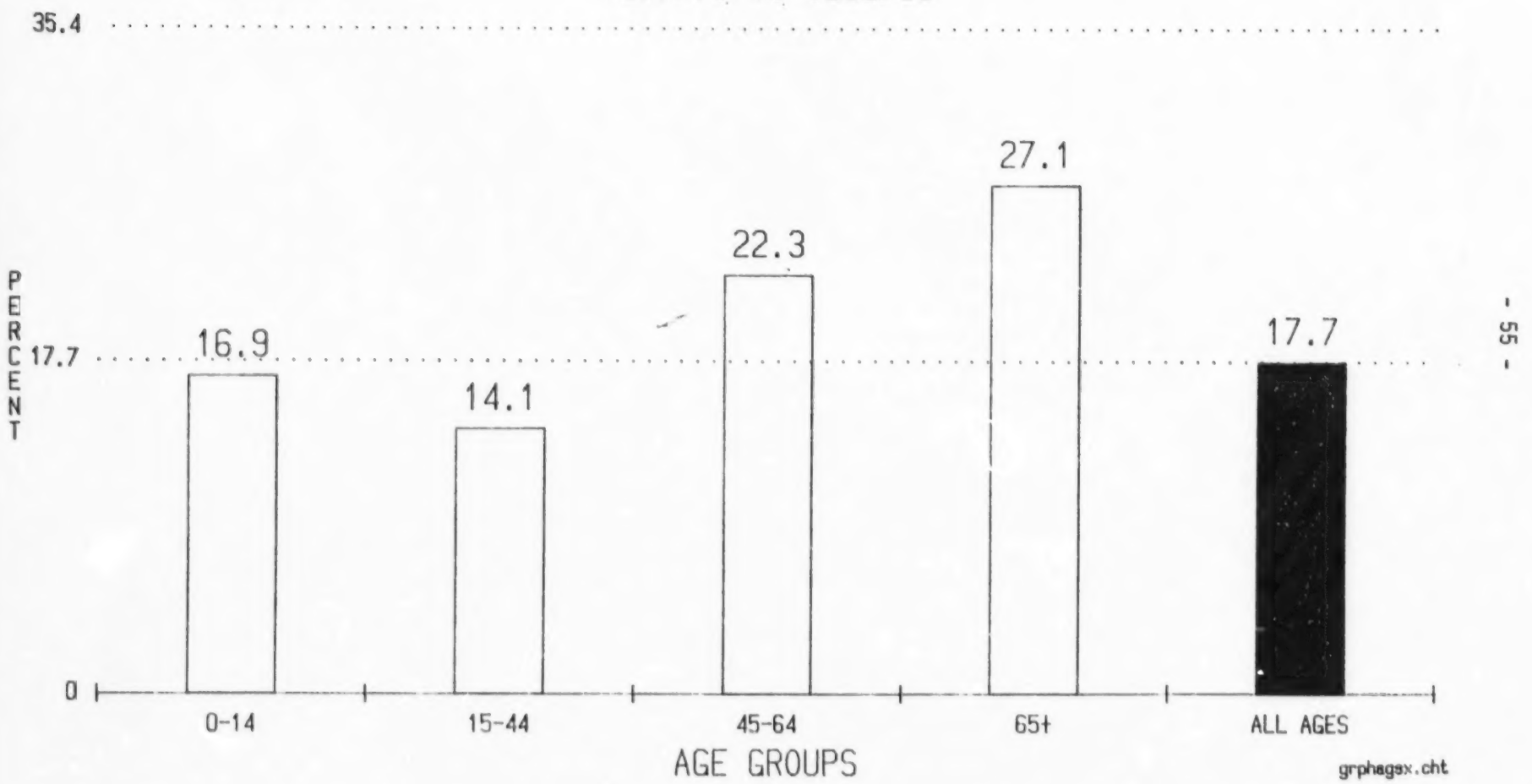
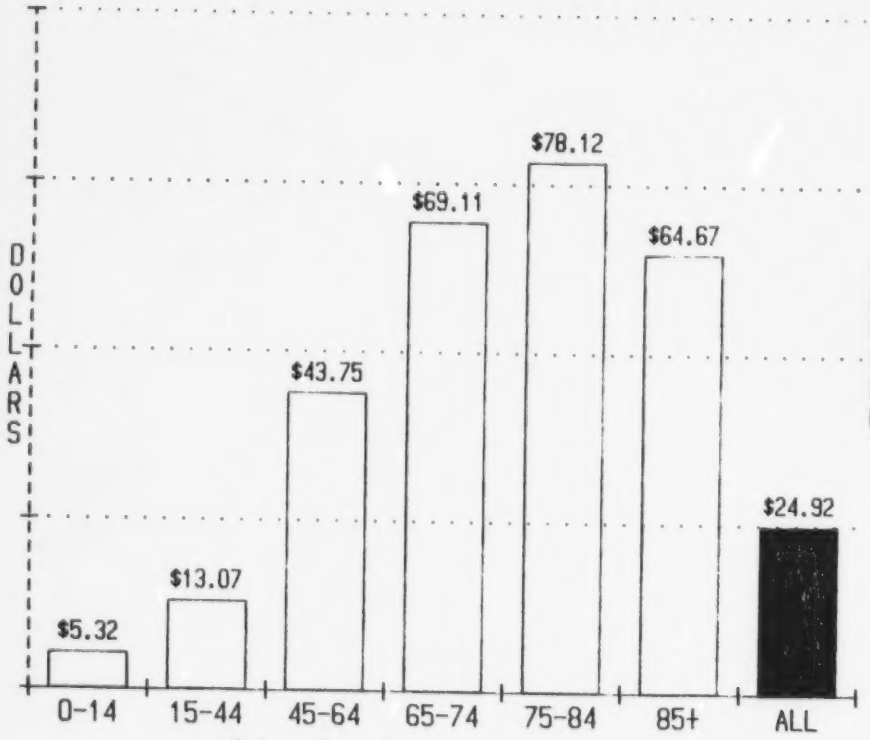


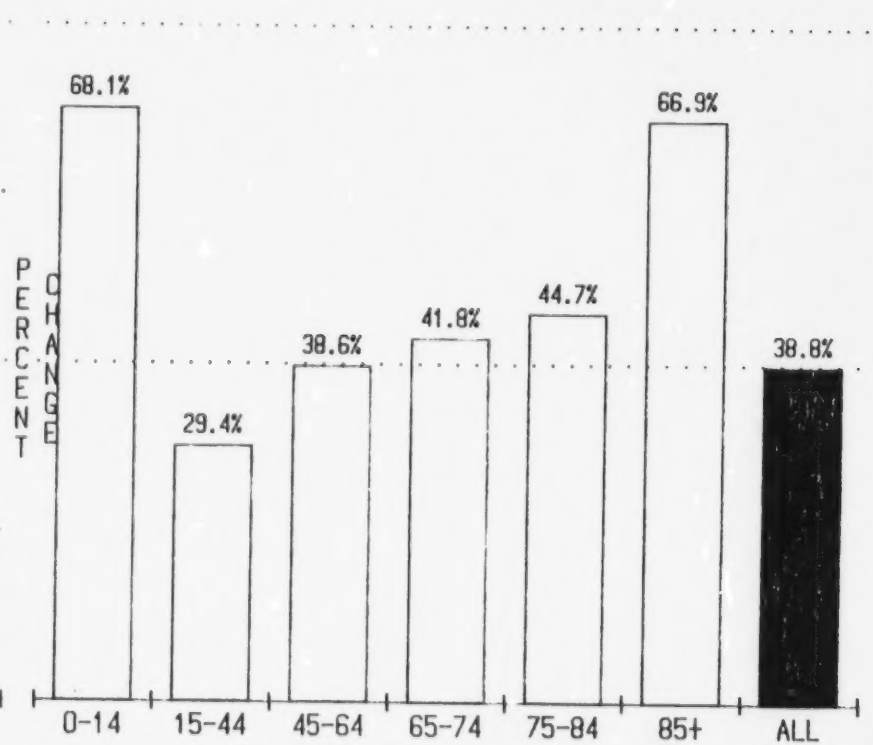
FIGURE XXVI: USE OF NEW DRUGS AND CHANGE IN USE FOR COMMON PRODUCTS

1985/86 COST PER PERSON FOR NEW DRUGS



Note: For drugs introduced to the formulary after 1977/78.

CHANGE IN USE PER PERSON, 1977/78 TO 1985/86



Note: For drugs common to the formularies of both study years.

FIGURE XXVII: EXPENDITURES PER PERSON FOR PHYSICIAN SERVICES.
STATUS INDIANS COMPARED TO ALL RESIDENTS, 1985/86

	STATUS INDIANS	ALL RESIDENTS	RATIO
GENERAL PRACTICE	149.50	93.91	1.59
MEDICAL SPECIALISTS	21.32	21.50	0.99
SURGICAL SPECIALISTS	32.76	32.99	0.99
TECHNICAL SPECIALISTS	18.17	21.43	0.85
ALL PHYSICIANS	221.74	169.84	1.31

NOTE: ALL FIGURES AGE-SEX ADJUSTED TO THE 1986 PROVINCIAL POPULATION.

* GREATEST LEVEL OF USE OF THE 16 PATIENT CATEGORIES CONSIDERED.

* SIXTY PERCENT HIGHER IN THEIR USE OF GENERAL PRACTITIONER SERVICES; USE OF SPECIALISTS SIMILAR TO PROVINCIAL AVERAGE.

APPENDIX: TERMS OF REFERENCE

STUDY INTO THE GROWTH IN USE
OF HEALTH CARE SERVICES

May 5, 1987

I. INTRODUCTION

Provincial government expenditures for health services have increased rapidly over the past ten years. These went from $381 per capita in the fiscal year 1976-77 to an estimated $1,074 in 1985-86, an increase of 182 percent. This growth exceeds that in gross domestic product and total provincial government expenditure by considerable margins.

A significant factor behind the growth in expenditures appears to have been the increasing use of health services. There have been no extensive studies, however, designed either to measure the increased levels of utilization or to identify the factors behind those increases. It is recognized that such studies are necessary if efforts to control the growth in expenditures are to be successful and done in a manner which best meets the needs of the public both as patients and taxpayers.

It has been decided by Saskatchewan Health, therefore, to form a Review Committee and a Research Group which will investigate issues related to health service utilization. The following lays out the terms of reference.

- Part II describes the overall objective.
- Part III describes the responsibilities and structure for the Review Committee and Research Group.
- Part IV provides the framework for the study.

II. OBJECTIVES

1. To measure the changing levels of use of physician, drug, and hospital services over time, including comparisons by patient age, sex, residence, and condition.

2. Where possible, to evaluate changes in the use of services according to the following criteria:
   - Effectiveness - Are there discernible benefits to the patient associated with the increased use?
   - Efficiency - Has the increased expenditure represented an efficient allocation of limited government resources in meeting both health and other objectives of the province.
   - Equity - Does increased use measure improved accessibility by the population in general or by certain sectors only, such as the urban population?

3. To identify factors which have influenced the changing use of services and endeavour to explain them.

4. To recommend changes in current policy to rectify any identified problems.

III. STRUCTURE

A. Review Committee

1. Membership

° To include representatives from each of the following (number of representatives in brackets):
- Saskatchewan Health (3, including chair)
- Saskatchewan Medical Association (3)
- College of Physicians and Surgeons (1)
- Saskatchewan Registered Nurses' Association (1)
- Saskatchewan Health-Care Association (1)

° Liaison to Research Group to be provided by chairperson of that group.

2. Major Responsibility - To review the results of studies carried out by the Research Group and to report on the implications for public policy.

B. Research Group

1. Membership

° To include representatives from the following:
- Policy Research and Management Services (2, including chair)
- Medical Care Insurance Commission (2)
- Saskatchewan Hospital Services Plan (1)
- Saskatchewan Prescription Drug Plan (1)

° Expert technical advice to be provided by an outside technical consultant(s).

2. Major Responsibility - To carry out studies designed to measure and evaluate the changing use of health services.

IV. FRAMEWORK

A. Phase I: Measurement and Review

° Research Group to prepare a report to be submitted to the Review Committee.

- Major areas to be covered in report are as follows:
  - literature review
  - review of utilization studies carried out by other provincial governments
  - review of utilization control mechanisms introduced in other provinces
  - measurement of changes in the use of services
  - identification of major growth areas
  - recommendations for further study.
- Interim progress reports to be provided to the Review Committee.
- Final Phase I report to be presented to Review Committee no later than December, 1987.

B. **Phase II: Review and Evaluation**

- Review Committee to consider Phase I report, with comments on all aspects to be provided to the Deputy Minister of Health by January 31, 1988. Time frame and resource commitment for Phase II to be identified after submission of this preliminary Review Committee report.
- Review Committee to advise the Research Group on issues with respect to specific studies recommended in Phase I.
- Research Group to carry out specific studies.
- Review Committee to consider results of Phase I and any Phase II studies and report on the associated policy implications.